

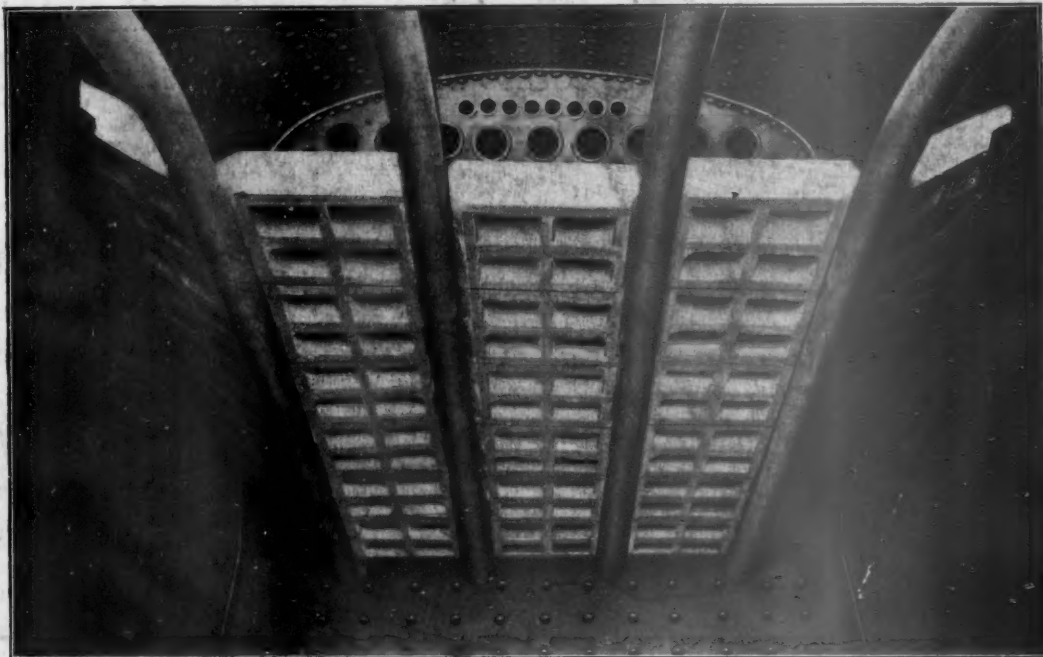
OCT 10 1921

# Railway Age

SECOND HALF OF 1921—No. 15

NEW YORK—OCTOBER 8, 1921—CHICAGO

SIXTY-SIXTH YEAR



Put an Arch in every Firebox to protect the Treasurer

## Coal Money Is Now Paying For Arches *Why Not Have the Arches?*

Last year's bill for locomotive fuel on American Railroads was \$672,891,000 (\$10,000 per locomotive).

To equip the remaining 15,000 archless engines with Security Sectional Arches would cost \$100 each (average), a total of \$1,500,000.

Setting aside the equivalent of only

0.2% of the coal bill would pay for arches for the entire 15,000 engines.

When installed the 10% saving of the arch (\$1,000 per year on the average locomotive) will return the investment in a month.

Every coal bill is paying for the arches many times over unless your road is 100% arch equipped.

### AMERICAN ARCH COMPANY, INC.

*Locomotive Combustion Engineers*

*McCormick Building*  
CHICAGO

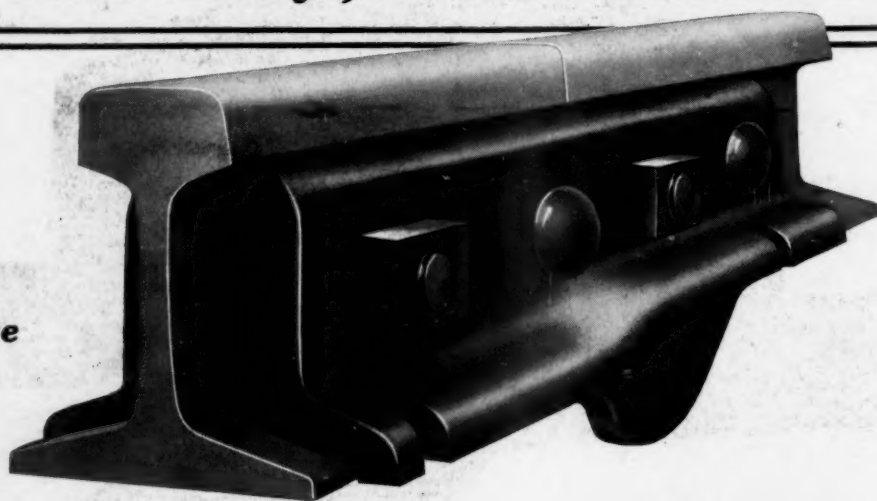


*17 East 42nd Street*  
NEW YORK

# What makes a Compromise Joint Trouble Proof?

- 1st** Proper distribution of metal
- 2nd** Perfect fit without distortion of section
- 3rd** Formed by a process which eliminates strain

All these  
essentials are  
found in a



## READING COMPROMISE OR STEP JOINT

A special analysis of Open Hearth Steel is used in the manufacture of Reading Compromise Joints. After casting, tensile strength is increased by a special method of heat treatment.

Proper distribution of metal in the Reading design reinforces the point under greatest stress, at which point the metal is  $\frac{3}{8}$ " heavier.

A perfect fit is insured by casting from a pattern which conforms with rail sections specified.

There is no strain in forming as the Reading methods require no bending, bars being cast to shape.

**American Chain Company, Incorporated**



**Reading Specialties Division**



**GENERAL SALES OFFICES: GRAND CENTRAL TERMINAL, NEW YORK CITY**

**District Sales Offices: Chicago Pittsburgh Boston Philadelphia Portland, Ore. San Francisco**



# EDITORIAL

## Railway Age

# EDITORIAL

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Our foreign trade in railway equipment and supplies, insofar as the government is interested in it, has been entrusted to the Industrial Machinery Division of the Bureau of Foreign and Domestic Commerce. American consuls and representatives of the Department of Commerce are scattered the world over.

### Government Service to Trade

It is their business to assist our foreign trade in every legitimate way. Information regarding opportunities for the sale of American goods, reports on business conditions in the various countries, peculiar local customs and laws which may influence business relations—all this and much more is transmitted by these representatives to the Bureau of Foreign and Domestic Commerce at Washington, where the data are distributed among the several divisions specializing in various industries. It is the division's duty to assemble the information and interpret it to its industry. The chief of the Industrial Machinery Division announces the earnest desire "to co-operate in every possible way with manufacturers and exporters of railway equipment and supplies in the markets of the entire world." The value of such a service as this is obvious, but by close co-operation with the division it can be extended and increased. At a time when our exports are dwindling, a service such as this, which is designed to promote foreign trade, should be utilized to the utmost.

A year ago the Committee on Heavy Electric Traction of the American Electric Railway Association pointed out the fact that the work of the heavy electric traction committees of several associations overlapped, and much of their work was duplicated. Railroads have been called upon to answer questionnaires sent out by a number of associations, all asking for information on a single subject. A clearing house was suggested to remedy this situation. This year, apparently in an effort to correct the situation, the same A. E. R. A. committee included in its report a statement of the activities of each of the other associations which had committees at work on this subject. This is without question a step in the right direction, but in the same report the committee presents a considerable amount of data and information which is largely a duplication of what has been presented previously by the Association of Railway Electrical Engineers. The electric locomotive data table published in this year's report, except for some additions, is largely a duplication of part of a table prepared last year by the A. R. E. E. committee. Data are also presented on multiple-unit equipment in this report, and the same report states that the A. R. E. E. committee is working on this subject. The bulk of the report consists of a bibliography, based largely on data issued two years ago by the A. R. E. E. committee, enlarged, reclassified and brought up to date. This rearrangement is spoken of as co-operation, but it undoubtedly involves a duplication of effort as a new group of men have rehandled and reprinted the bibliography. An invitation will probably be sent out by the American Electric Railway Association to the executive bodies of the American Railway Engineering Association, the American Rail-

way Association, Mechanical Division, the National Electric Light Association, the American Institute of Electrical Engineers, the Association of Railway Electrical Engineers, and such other organizations as the executive committee of the A. E. R. A. may deem expedient, asking each association to appoint two representatives to serve on an American committee on electrification. This will probably meet with some opposition as the steam railroads are those most vitally interested, and it would seem logical that their representation should be in proportion to the magnitude of their interest. This opposition is probably justifiable, and it may not be entirely feasible for one committee to handle all matters pertaining to electrification. The fact remains, however, that all of the associations named should confer on the subject, and either form an American committee on electrification, or a steering committee which could assign appropriate parts of the work to each of the interested associations and thus unite and direct their efforts and do away with much unnecessary duplication and lost motion.

The financial condition of the railroads during the past four or five years has been such that the appropriations for machine tools, signaling, passing tracks, yards and similar improvements have of necessity been held in abeyance in spite of the fact that the savings that these expenditures would have produced would represent a high rate of return on the proposed investment. In order to stimulate the investigations and calculations that are now required to revise these old estimates it would seem advisable to consider the increasingly favorable conditions that will undoubtedly influence the expenditures for improvements during the coming year. In brief, the steady increase in the net income of the roads should point to the probability that the railroads will soon be in a position to finance a considerable part of the extensive maintenance and improvement program that has been delayed so long. Considering these facts it would appear self-evident that the officers in charge of the various departments should now investigate with added zeal the details of the equipment and materials listed on their proposed budget estimates in order to ascertain whether they are still in accordance with the best practice.

The New York Central on October 1, in a letter addressed by President A. H. Smith to the company's 75,000 employees, announced the adoption of a plan intended to assist them in the purchase on the installment plan of stock in the company. The accession of this important system to the ranks of those who believe in the value of this idea is a matter of congratulation. The *Railway Age* has advocated the encouragement of investment by employees in the stock of the company by which they are employed. On the one hand the employees are led to take a greater interest in their company and on the other the assistance given the employees to lay aside their funds is always praiseworthy. The value of the idea is

### Revise the Old Estimates

### Helping Employees Buy Stock

further pointed out by the success that has accompanied the plan on the Lehigh Valley which was the first large railroad to adopt it or by the favor with which similar plans are regarded and utilized by the official personnel and employees of such industrial companies as the American Telephone & Telegraph Company, the United States Steel Corporation, etc. While it is true that the stocks of certain railroads, such as the Pennsylvania, Lackawanna, etc., are held in sizable proportion by officers and employees, it is unfortunate that the railways have been as slow as they have been in adopting and pushing the idea. With three important roads—the Lehigh Valley, the Union Pacific and the New York Central—now favoring assisting their employees to purchase stock, considerably better progress may be expected in the future.

The Safety Section of the American Railway Association has made a successful start. The preparations for the Boston convention were made on rather short notice and it was not intended to do much talking at this first meeting; but the talking that was done was very much to the point. Not the least significant feature of the meeting was the careful attention paid to the brief address by Professor W. J. Cunningham, which was a logical appeal to avoid the error (which has been quite common) of trying to make circulars, pictures, meetings and emotional speeches accomplish the good which can be accomplished successfully only by long-continued and intimate intercourse with individual employees. The important action of the meeting was the resolution to start a national campaign to educate automobilists not to kill themselves (and other people) at grade crossings. The reader who thinks that this subject is already too hackneyed should examine with care Mr. Dow's outline of what ought to be done. The convention has practically decided that this is what *shall* be done. This means that the hopeful results already realized on a few roads are to be aimed at on every road throughout the country. The field for possible enlightenment of the public is unlimited. Last year the people killed at grade crossings numbered seventeen times as many as the passengers killed in train accidents.

## The Talk of a Railroad Strike

THE EFFECTS of government control and the Plumb plan propaganda carried on by labor leaders on the relations between the railways and the public, on the one side, and railway employees, on the other, have seldom been more strikingly illustrated than by the widespread talk recently of a general railway strike.

On July 1 a reduction averaging 12½ per cent was made in railway wages. Some changes also recently were made by the Railroad Labor Board in the rules regarding compensation for overtime work. On the whole, however, railway employees who have not been laid off are better off relatively than almost any other class of people in this country. Even since the recent reduction of wages the average hourly railway wage is about 134 per cent more than in 1914. In August, according to the statistics of the National Industrial Conference Board, the average cost of living in all parts of the United States was only about 65 per cent more than in 1914. Therefore, in spite of the recent reduction in wages, the average railway employee can buy with an hour's wage 42 per cent more of the necessities and comforts of life that he could before the war.

The average hourly wage of union labor employed in all industries increased between 1914 and 1920 only a little over one-half as much as that of railway labor, and within the

last year has been reduced much more in proportion. The average prices of farm products are now only about 15 per cent more than in 1914, while the prices of the things the farmer has to buy are still relatively much higher. The result is that he cannot buy with a given amount of his products nearly as much of other things as he could in 1914.

While, however, railway employees as a class, in spite of the recent reduction in their wages, are relatively so much better off than the farmers and most other working men, the leaders of the railway labor unions are busily engaged in taking and counting strike votes. Of course, the votes are announced as practically unanimous for a strike. They always are. The percentage of members of a railway labor union usually announced as voting for a strike is 98. Sometimes it is only 97, and sometimes it is 99. The skill the leaders have acquired in always getting practically the same percentage of their members to vote for a strike is quite remarkable. If they should submit to the unions the question whether they should strike because the science of astronomy denies to them control over the movements of the planetary system the vote in favor of striking would be announced as just about 98 per cent. The question of a railway strike is one of great public importance. Some day the public may insist on having the ballots prepared and counted by some governmental agency. We suspect the official count would then show a vote for a strike surprisingly different from the 98 per cent now usually announced.

There is one important feature of the strike votes now being taken which makes them different from any ever taken before. The Transportation Act empowers and directs the Railroad Labor Board to fix reasonable wages and working conditions for railway employees. If the Labor Board performs its duty in accordance with the provisions of the Act, a strike by railway employees in violation of its decision would be a plain violation of a federal law. Therefore, the strike votes now being taken are votes to determine whether railway employees shall commit wholesale violations of a federal law. The labor leaders have loudly denounced certain railway companies on the ground that they have violated this same law. Nobody ever has charged, however, and there never has been any ground for charging, that the railway companies as a whole ever have violated, or considered violating, the law. It is a remarkable spectacle, the significance of which the American public can hardly overlook, when the labor leaders submit to a vote of all their members the question whether they shall deliberately and openly violate a federal law, and this in spite of the fact that the changes in wages and working conditions to which they object are so small as to leave railway employees as a class better off than almost any other large class of people in the country.

The managements of the railways certainly do not want a general strike. They can now, however, listen to the talk of it with less disturbance and apprehension than they usually have felt on the numerous occasions when there has been such talk within recent years. It has cost the railway companies and the public a vast amount of money to comply with the orders regarding wages and national agreements which the Railroad Labor Board has made within the last year and a half. A strike would put railway employees belonging to labor unions entirely outside the law and leave the managements legally free to deal as they thought proper with wages and working conditions without themselves violating the law.

The traffic being handled by the railways is the smallest for some years. Therefore it would be easier for the railways to handle it, in spite of a strike, than it would have been at any time within recent years. Besides, it is estimated that there are now about 4,000,000 men out of employment in this country. About 600,000 of these are men who were employees of the railways a year ago. The difficulty of



getting men to replace the strikers would therefore be much less than it would have been at any time within at least six years.

The facts that have been mentioned are not unknown to the labor leaders and most members of the unions. Therefore, unless there are special considerations of labor union politics which are influencing the leaders, all the current talk about a railway strike will end in talk. For some years, however, there has been strong reason for believing that sooner or later there would be a general railway strike. The propaganda persistently carried on by labor leaders and the Plumb Plan League have produced sentiments and feelings among railway employees, especially the element that are disposed to be radical, which have greatly increased the possibility of a general strike at some time or other. The innumerable concessions, beginning with the passage of the Adamson Act, which the unions have obtained by constant threats of strikes, and by not infrequent sporadic actual strikes, apparently have encouraged them to believe that whatever they cannot get by reason they can get by force. If a strike there must be, the present would be, from the standpoint of the railways and the public, as good a time as any to have it. If the railway labor leaders must be taught sooner or later that they cannot dictate their own terms to the railways and the public by constant threats of force, the sooner they are taught it the better it will be for all concerned.

## Train Speeds Affect Maintenance Costs

**A**RE HIGH TRAIN SPEEDS a necessity or a luxury? Under the obligation imposed on the railroads to operate their properties with prudence and economy, this question is of sufficient importance to demand careful scrutiny. The relations of speed to fuel consumption and engine rating are generally recognized, but the effect of speed on the cost of track maintenance has received minor consideration. With increases in speed as with added wheel loading, the maintenance of way department is not usually consulted but must strive to meet the larger burden as it is imposed. This question has received some study in connection with analyses of the relative costs of passenger and freight service, but it has been given little consideration as a factor in the determination of the justification for increased speed, particularly of passenger trains.

Whatever the facts may be with regard to what may be termed legitimate or regularly imposed speeds, the real waste as concerns the maintenance of way department arises in the lack of regulation or control of train velocity as a consequence of which trains occasionally run at much higher speeds than those specifically authorized. In the case of wheel loading the problem of the maintenance of way officer is to insure adequacy for a definite and regularly applied burden. With speed it is one of insuring safety for an occasional velocity far in excess of that required for the needs of the traffic.

Taken as a whole the average passenger train speeds have not increased materially in the last quarter century. It is also certain that the lengthening of train schedules to permit of lower average speeds would meet with severe public objection. The answer, therefore, is not to decrease the average velocity but to exercise that degree of control which will eliminate the unnecessary, excessive speed—speed to compensate for needless delays at station, time killing, etc. In short, the need is for regulation that will prevent speeds in excess of those reasonably required for the movement of trains according to properly prepared schedules, proper measures being instituted to expedite the handling of trains at stations, terminals, etc.

Such regulation of locomotive operation is entirely within

reason and has the justification of precedent. With the maximum velocity of trains established and properly supervised, standards of track maintenance on lines of varying character may be established with a far greater degree of accuracy than is now generally possible and in consequence economies may be introduced with no sacrifice of the earning power of the lines in question.

## A New Form of "Jitney" Competition

**A**LTHOUGH many railway officers have taken a keen interest in the extensive highway construction programs now under way, railway managements as a whole have not taken this development as seriously as its possibilities warrant. Co-operating in the promotion of good roads in the early stages of the propaganda because of the aid which such highways would render to the farmer in bringing his products to their tracks, the railways now find that this movement has developed primarily into a system of trunk line construction having as one of its objects the connection of important cities. These highways, which have been built at public expense, are being used largely and in many cases primarily by motor trucks which have sprung up, mushroom-like, to engage in the transportation of both passengers and freight in competition with the railways. Where these trucks open routes not existing previously they are rendering an added service to the public, but in the vast majority of cases their routes parallel existing steam lines and the service offered duplicates that already existing. The public is therefore receiving little or no additional service and the only result is to divide the traffic between the two agencies to the detriment of the railways.

These motor trucks are, in general, not subject to regulation of rates, character or regularity of service or any of the other restrictions imposed on the steam roads for the protection of the public. They are free to abandon service, temporarily or permanently, at any time that it becomes unremunerative, while the steam roads must be prepared to serve the public at all times, in good weather or bad. The trucks are thus free to pick the cream of the business, leaving the less remunerative traffic to the steam roads.

The trucks are able to make inroads on the traffic of the steam roads primarily because of the fact that the highways are open to them without expense whereas the railways are required to build and maintain their tracks, structures and other fixed properties over which they operate. If the railways were able to pass on to the public their corresponding expenses they could likewise reduce their costs greatly. When the public wakes up to the fact that the highways which it has provided at tremendous public expense, are being destroyed by these motor trucks and will soon require extensive maintenance, towards which the trucks are contributing almost nothing, it will demand that the owners of the trucks pay their proportion of the added investment in the highways and in the maintenance expenses which have been incurred largely on their account. When the owners of the trucks are thus required to contribute their full share to the cost of their roadways, their operations will be restricted primarily to the transportation of short haul less-than-car-load freight, a traffic which the railways can well afford to let them have. Until that time comes the railways will continue to suffer sporadic inroads upon their traffic at one point after another, which inroads are of serious proportions in the aggregate.

This unregulated mushroom competition which the railways are now meeting is similar to that which the street railways have encountered with the jitneys in many cities in recent years. It is to be hoped that the public will see the natural results of this more recent competition in sufficient time to prevent a repetition of the experiences of Des Moines, Ia., Bay City, Mich., and other cities where the

street railways have been forced to suspend service with the result that the jitneys have then been unable to cope with the traffic and the public has suffered greatly. Railway managements can do much to educate the public to the unfairness of the competition to which they are now subjected and stem the "Ship by Truck" and other propaganda of the motor interests. By presenting these facts they will not only be protecting their own future, but will be rendering a distinct service to the public.

## The Illinois Central's Public Relations Work

EVERY RAILWAY EXECUTIVE is painfully aware that government regulation has become such that it exerts a dominant influence in determining whether the railways as a whole and individual railways can be developed and operated successfully from the standpoint of either the public or their owners. The governments represent the public, and in the long run public sentiment determines how the various governments, municipal, state and federal, regulate the railroads. It necessarily follows that if the railways are to be successfully developed and operated public sentiment must be made and kept so intelligent and fair regarding railway matters that it will cause regulation to be intelligent and fair.

On whom devolves the plain duty of causing presentation to the public of the information and arguments which will cause it to understand railway matters and to favor fair and constructive regulation? It devolves upon the railway executives themselves. It is under present conditions as much their duty constantly to present the facts about the railroad business to the public so as to bring about intelligent and fair regulation as it is to present facts to their officers and employees which will bring about intelligent and energetic operation of the properties. There are many thousands of people in this country who find, or believe they find, it is to their selfish interest to attack and misrepresent the railways. If these attacks and misrepresentations are not constantly met with presentations of the facts and of counter arguments public opinion will be constantly misled and regulation of railways will be unfair and harmful.

Of course we do not mean the executives of the railways should personally be constantly engaged in presenting to the public facts and arguments regarding the railway situation. There is no more reason why they should personally do all of this kind of work than why they should personally perform the duties of the superintendent of motive power, the general manager, or the general counsel. But they should see that the relations of the railway with the public are properly handled just as they should see that the equipment is properly maintained, that freight and passenger service are properly rendered and that the legal interests of the company are properly protected.

It is a remarkable fact that although public sentiment, acting through government regulation, has become within recent years such an important, and even dominant, influence in the development and management of the railways, only a comparatively small number of railway executives have created and maintain on their railways special departments adequately equipped to present constantly and effectively to the public the facts about the railroad situation and to make replies to the innumerable misrepresentations of the railways which constantly are being given dissemination. The worst troubles of the railways for 15 years have been mainly due to unfair regulation, and unfair regulation undoubtedly has been mainly due to failure of the railways persistently and adequately to present the facts about their business to the public.

The education of public opinion concerning the railroad

situation demands not only organized action by the railways as a whole regarding problems of national scope, but also persistent and intelligent public relations work by each individual railway in its own territory. This is a vast country with a population of over 100,000,000. The railways ramify into every part of it, and they must carry on their public relations work in every part of it if they are to make the public understand their problems and through fair and reasonable regulation help to solve them.

Among the comparatively small number of large railways on which the problem of educating the public regarding the railway situation recently has been boldly, persistently and skilfully attacked is the Illinois Central. President Markham is an ardent believer, first, that the public will deal fairly with the railways if it is given an opportunity to understand the conditions under which they are operated and the problems their managements have to solve; and, secondly, that a railway management can and should so present the facts and principles of railway economics and administration to the public as to create a friendly and intelligent public sentiment regarding the railways. Therefore, within the last year he has carried on a very unusual campaign to improve the relations of the Illinois Central with its public. An account of what has been done under his direction and of some of the results that have been obtained is given elsewhere in this issue.

Some minor details of the work Mr. Markham has done and of the way it has been done may be open to criticism, and, indeed, have been criticised. One thing, however, is certain. This is that the work which has been done has had, from a railway standpoint, a very favorable effect upon the attitude of the press and of the public in the territory that the Illinois Central serves. The facts regarding the railway situation which have been presented in the Illinois Central's advertising and the public statements made by its president and other officers have caused the press and public in its territory to understand the railway situation far better than they otherwise would have understood it. Under present conditions a better understanding by the press and public of the railway situation is bound to redound to the advantage of the railways. Therefore, the work Mr. Markham has done and caused to be done has been beneficial not only to the Illinois Central but to the railways of the country as a whole. It may or may not be significant in this connection that during the last year the Illinois Central has shown as good operating and financial results relatively as any other railway in the country.

There are certain important things about railway public relations work which many railway officers seem surprisingly slow to learn. One of these is that this is work which always will have to be done as long as the railways are privately owned or they will never be intelligently and fairly regulated. Another is that it is important work. The most able and energetic management of the railways in other respects will never make and keep them prosperous unless their public relations work is so done as to secure intelligent and fair regulation. Another fact often overlooked is that effective public relations work requires the employment of able men with special qualifications and the giving to them of opportunity to devote their whole time to it. Recognition of these facts must carry with it recognition of the further important fact that effective public relations work cannot be done without the expenditure of substantial amounts of money in perfectly legitimate ways.

Mr. Markham has recognized and accepted all these facts and acted accordingly. His example, his methods and the results obtained merit just as serious and careful consideration by other executives as a plan that his or some other railroad might adopt and carry out to increase train loads or promote safety in operation; for the intelligent and adequate handling of public relations has become just as impor-



tant and integral a part of railroad administration as the adoption of methods of increasing economy of operation or of reducing accidents.

## Central Ownership of Freight Cars

THE CENTRAL OWNERSHIP of freight cars and central control of their disposition has frequently been suggested as a way out of a situation which is far from ideal either from the viewpoint of the shipper or of the railroad. The most recent advocacy of this plan was voiced by George C. Conn, traffic director of the Buick Motor Company, in a paper before the Western Railway Club, an abstract of which appeared on page 635 of last week's issue. The advantages claimed for this plan may be summed up as follows: First, a more flexible car supply to meet seasonal demands, with a smaller investment; second, a reduction of empty mileage; third, the development of cars of standard detail design, and of standardized sizes most suitable for the shippers' requirements; fourth, the placing of rentals and repairs on a business basis, including the establishment of centrally owned heavy repair shops.

The question immediately arises, why can these advantages not be obtained with the railroads owning their own rolling stock? It may be accepted as true that the ownership of freight cars is generally regarded by railroad managements as incidental to the more direct problems of getting and moving traffic. The history of the development of interchange regulations both as to maintenance and rentals gives ample justification for this statement. Apparently the theory is held that a scale of nominal charges for repairs made in interchange and for per diem rentals is all that need be made in settling accounts between the railroads, as these settlements are merely clearing house operations with approximately equal debits and credits in each case. But the debits and credits are not equal and there is no reason to expect them to be equal.

As long as the nominal charges do not exceed the actual cost of the service rendered there is no incentive, for instance, for a weak road to tax its credit to provide itself with an adequate supply of equipment reasonably to care for its own needs. If the nominal charge is less than the cost of the service there is a good business reason why such roads should own the least possible amount of equipment that traffic conditions will permit. An analogous situation holds with respect to the maintenance of cars in interchange. As a result, neither the owning nor the using line has a real business incentive to meet its full responsibility for maintaining an adequate supply of highly serviceable equipment. These conditions are fundamentally unsound and are at the root of the generally unsatisfactory equipment situation. Improvement has been made both in per diem rates and in car repair billing prices during the past few years. But it is significant that these improvements came slowly and painfully only through agreement among the railroads.

The question of standardization has received attention for many years and progress has slowly been made toward a degree of standardization of details which, when completely carried into effect, will go far toward reducing the need for empty mileage in connection with freight car maintenance. The standardization of car sizes to satisfy completely the varying requirements of the shippers and the railroads' pocketbook is even more difficult of settlement than the standardization of details. Here again the difficulty lies in finding common ground for agreement among the railroads.

Central ownership is suggested as a solution of these difficulties. But before a plan of central ownership can be put into effect the railroads must agree on it among themselves. They must agree to accept a rental charge which will be fixed on a business basis, since a central owning corporation

will be required to charge a rental high enough, while the cars are in service, to carry its capital investment, unimpaired through depreciation, during the time the equipment is idle as well as during the time it is in service, to pay for the cost of maintenance and to provide a profit large enough to justify the owning corporation continuing in the business.

When the railroads become sufficiently alive to the business side of car ownership to agree to such a plan will not the greatest need for the plan have ceased to exist? It will be no more difficult to secure agreement to adequate per diem rates and a businesslike schedule of billing prices for labor and material used in interchange repairs than it will be to agree to these same requirements of a scheme of central ownership. Similarly, when this state of agreement has been reached, the same harmony of action could be secured in the adoption of a standard car or cars to be owned by the railroads individually. And the way now lies open to the railroads to break away from uneconomical shop conditions through the contract repair shop as effectively as though the establishment of shops under the ownership and operation of a central equipment corporation.

There might be some saving in car capacity through a scheme of central ownership which would be able to control freight car distribution to meet the requirements of varying seasonable demands. The great seasonal variation in car loadings, however, is largely coincident throughout the country, amounting to from 200,000 to 300,000 car loads a week. If the equipment is provided to meet the maximum demands of the country through the late summer and fall months, there must be a large surplus to be carried during the winter and spring months even under central ownership. Furthermore, it is doubtful whether a central owning corporation could exercise the function of distribution in times of maximum demand to better advantage than it is now exercised by the Car Service Division of the American Railway Association and it would still remain under the regulation of the Interstate Commerce Commission, just as at present.

The conclusion, therefore, seems justified that a state of mind which would make possible a general agreement among the roads to the central ownership of freight cars, with all it entails in adequate charges for services now rendered at nominal prices, and the sacrifice of individual opinions as to the best type of equipment for local needs, would automatically accomplish much the same ends with no change in equipment ownership. Whether or not this in the end should prove to be the case, the sooner a general knowledge of the business fundamentals essential to the success of such a scheme is acquired by all the railroads, the sooner a situation unsatisfactory alike to the railroads and the shipping public is likely to be effectively improved.

## Philadelphia & Reading

THE PHILADELPHIA & READING's history is, in the main, a story of the manner in which that system engaged in the anthracite coal business—the purchase of coal lands and the mining and sale of coal—to the end that by owning its own mines the carrier would be guaranteed a steady and growing business in the transportation of anthracite coal. The Reading for many years has been the largest carrier of anthracite coal. It is not generally known, however, that its business of carrying bituminous coal is also large. The tonnage of bituminous moved in recent years has been about one-and-one-half times the tonnage of anthracite. It will no doubt surprise many to learn that the Reading—known as the country's largest carrier of anthracite—in 1920 actually carried twice as much bituminous as the Hocking Valley, or three times as much as the Virginian.

Interest in the Reading is especially active at this time

because of the pending decision of the United States Supreme Court as to the relative rights of the preferred and common share-holders of the parent Reading Company to share in the segregation of the railroad properties from the coal properties. It is especially interesting, therefore, to see what kind of a railway system the Philadelphia & Reading is and what it does.

The Reading system has a total mileage of 2,223, of which 880 is double track. This includes: Miles owned by the Philadelphia & Reading, 387; miles leased by the P. & R., 702; miles owned and leased by other companies in which the Reading Company owns the controlling interest, 1,130; the Allentown Terminal Company leased jointly by the P. & R. and Jersey Central, 3. All of the stock of the Philadelphia & Reading is owned by the parent Reading Company, which also owns the equipment and leases it to the P. & R. The owned and leased lines of the Philadelphia & Reading total 1,127, including trackage rights.

The P. & R. also operates, but reports figures separately for, the other lines in the system such as the Perkiomen, the Catawauqua & Foglesville, the Catawissa, etc., but excepting the Central of New Jersey. The latter company is controlled by the parent Reading Company through majority stock ownership. As noted, it is operated separately, but traffic and operating arrangements are in force to facilitate co-operation of the two lines to the best advantage. It is well-known that the Philadelphia & Reading Coal & Iron Company—owner of the Reading coal mines—supplies a large proportion of the railroad's total anthracite tonnage.

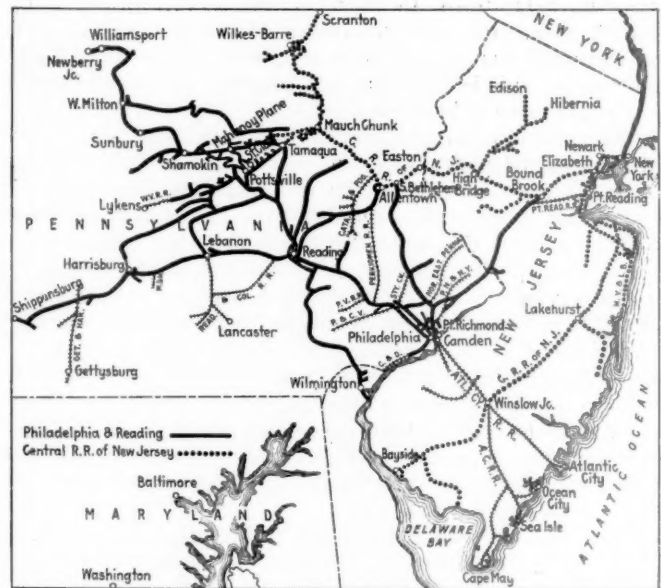
The Reading secures its anthracite from a large area lying generally north and west of Pottsville and Tamaqua and also from the Lykens district to the southwest. The area served is known technically as the southern or Schuylkill field and the western middle or Mahanoy and Shamokin field. Some of the coal moves west via Newberry Junction or Williamsport and the New York Central. The predominant movement is eastbound to Philadelphia and the Read-

from there east with loads frequently as high as 5,000 or 5,500 tons gross handled with an M1 or Mikado locomotive, the grade being about 0.5 per cent descending.

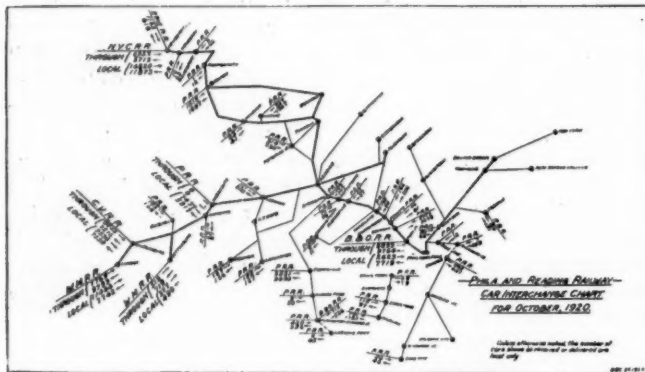
TONNAGE OF FREIGHT CARRIED BY THE PHILADELPHIA & READING—  
TONS OF 2,000 LB.

Year	Anthracite	Bituminous	Mdse.	Total
1917.....	16,239,859	22,549,852	32,548,033	71,337,745
1918.....	16,277,781	24,078,596	30,918,224	71,274,602
1919.....	13,815,371	23,320,574	26,074,519	63,210,464
1920.....	15,121,124	24,875,761	29,716,679	69,713,564

Professor Ripley in his report on railroad consolidations—reproduced in part in last week's issue of the *Railway Age*—has considerable to say concerning the manner in which the Reading serves as a connecting link and terminal facility for various other roads, notably the Baltimore & Ohio. In his plan he proposes the inclusion of the Reading and its associated lines with the Baltimore & Ohio system, his reasons being the larger traffic interest in the Reading of the Balti-



The Philadelphia & Reading and Its Controlled Lines



From Professor Ripley's Report on Railroad Consolidations

P. & R. Car Interchange Chart

ing's territory generally, to New York via Port Reading and to New England. From Port Reading the movement to New York is on lighters. To New England the movement is all-rail via Allentown over the Jersey Central to Phillipsburg, thence over the Lehigh & Hudson, the Poughkeepsie bridge route and the New Haven, or by rail and water in the form of a barge movement from Port Richmond or Port Reading.

The coal is assembled, speaking rather generally, at various points in the coal district, moved over the mountains in some cases on planes with a barney and cable and brought to points such as St. Clair (just north of Pottsville), Tamaqua, etc. At St. Clair there is a gravity yard with a capacity of some 4,400 cars; at Tamaqua, a yard with a capacity of 2,100. The St. Clair yard is in reality the main assembling yard for the anthracite coal district. Trains move

more & Ohio as compared with the New York Central or Pennsylvania and the desirability of furnishing the Baltimore & Ohio with better arrangements of access to its various New York terminals. The Baltimore & Ohio in effect reaches the Reading at Philadelphia and at Shippensburg and it is through these two gateways that the Reading receives the larger portion of its bituminous coal business.

Some coal is received at Williamsport from the New York Central, largely coal originating on the Buffalo, Rochester & Pittsburgh. Such coal, as well as the merchandise freight, which is received from the Baltimore & Ohio at Philadelphia moves north over the Reading and Jersey Central in through freight runs from Willmerville, near Wilmington. The coal handled in this way leaves the Jersey Central at Cranford Junction, where connection is made with the B. & O.'s Staten Island lines. The merchandise freight for New York is moved to Jersey City.

The coal from the Baltimore & Ohio which is received at Shippensburg is the most important part of the bituminous coal movement. The B. & O. does not connect directly with the Reading at Shippensburg. The coal movement is over the Western Maryland from Cherry Run and over the Cumberland Valley from Martinsburg. This coal may move over the Reading's lines in various ways. A typical movement is through Harrisburg—or Rutherford yard which has a capacity of 4,900 cars—thence to Allentown, where the coal is turned over to the Jersey Central for movement to points on that road and to New England as in the case of anthra-



cite coal. Other coal moves to Port Reading for delivery to points adjacent to New York City or to New England. The more important movement, however, is to the Reading's industrial territory and to Port Richmond, in the latter case for New England delivery by water or for export. This export movement is sizeable; the scheme of a tidewater coal exchange and pools is in use as at the coal piers at Baltimore and Hampton Roads.

The Reading's terminal at Port Richmond has a capacity of some 8,600 cars. There is also a grain elevator with a capacity of 1,000,000 bushels. The capacity of the yards at Port Reading approximates 4,500 cars. The coal movement over the Reading rails is its most important business. The Reading, however, also handles a merchandise business of large proportions. It stands high with shippers for the service it renders with its symbol or manifest trains and for its favorable connections.

The Reading's passenger business is noted for its high speeds. During the war this service was considerably upset. No less than 21 of the "Every hour on the hour" New York-Philadelphia trains were withdrawn. The schedule has not yet been restored and the Reading's passenger business has suffered accordingly. The Camden-Atlantic City business has done better. The road went through August, 1921, with a record of 95 per cent of its Jersey seashore trains on time. The Atlantic City schedule calls for 56 miles in 55 minutes.

Because of the conditions contingent upon federal control, in the way of increased expenses and changes in traffic arrangements, the Reading did not show favorable operating results while it was being operated by the government and it is only in recent months that it has been able to begin to show improvement. The standard return was about \$16,000,000. In 1918, the net railway operating income was but \$8,847,390; in 1919, only \$3,083,280. In 1920 there was a net railway operating deficit of \$655,107. In the first seven months of 1921 the net has been \$3,901,337 as against a deficit of \$1,139,868 in the same period of last year. The improvement in recent months is indicated by a net of about \$800,000 in April, May and June respectively, and of \$1,200,000 in July.

The Reading is not at present doing anywhere near as much business as it was doing at this time last year, its net ton-miles in the first six months of 1921 being 2,664,786,000 as compared with 3,386,271,000 in the same period of last year. The road, however, is in rather good shape from the standpoint of maintenance. Its bad order cars on September 15, to take one factor, were but 5.3 per cent as against an average for the country of 16.3 per cent. The impression one would derive, therefore, is that the Reading is showing steady recovery and should be in good shape to handle the increasing traffic that will accompany any revival in business conditions.

The Reading's corporate income account for 1920 showed a net of \$9,010,790 as compared with \$8,460,763 in 1919. The dividends paid in 1920 totaled \$6,372,255, all accruing to the Reading Company, which owns all of the Philadelphia & Reading Railway Company stock.

The operating results for 1920 as compared with 1919 are as follows:

	1920	1919
Mileage operated.....	1,127	1,127
Freight revenue.....	\$78,043,029	\$57,850,183
Passenger revenue.....	11,532,277	10,854,210
Total operating revenue.....	94,819,755	72,871,823
Maintenance of way expenses.....	10,746,542	7,490,427
Maintenance of equipment.....	26,994,997	19,296,540
Traffic expenses.....	709,292	482,181
Transportation expenses.....	48,578,612	35,476,881
General expenses.....	2,162,870	1,646,549
Total operating expenses.....	89,486,240	64,608,174
Net revenue from railway operations.....	5,333,515	8,263,649
Railway tax accruals.....	2,512,846	1,659,029
Railway operating income.....	2,796,664	6,602,723
Net railway operating income.....	Def. 655,107	3,083,280

The corporate income account is as follows:

	1920	1919
Compensation (January and February, 1920; year 1919).....	\$2,656,513	\$16,009,826
Guaranty, March 1 to August 31.....	7,969,539	.....
Gross income.....	15,514,922	16,351,892
Interest on funded debt.....	1,956,195	1,961,583
Total deductions from gross income.....	6,504,132	7,891,129
Net income.....	9,010,790	8,460,763
Appropriated for investment in physical property	2,538,571	4,500,100
Dividends.....	6,372,255	4,248,170

## Central of New Jersey

THE CENTRAL of New Jersey is controlled by the Reading Company through majority stock ownership. The Central owns 169,788 shares of the total of 184,200 outstanding shares of the Lehigh & Wilkes-Barre Coal Company. By the order of the court in the Reading dissolution case, the Central has been ordered to divest itself of its shares in the coal company. The government attorneys also wanted the court decree to order the sale by the Reading of its Jersey Central shares. Upon protest by the Reading Company that such an order would be unfair at this time, the court required the Jersey Central shares to be transferred to trustees appointed by the court and held until action had been taken by the Interstate Commerce Commission looking to the formulation of a plan of railroad consolidation as required by the Transportation Act. The commission has now made public the tentative plan of railroad grouping.

Bearing in mind that this tentative plan is meant merely as a starting point for discussion of the proposed consolidations, it is nevertheless patent that Professor Ripley suggests, which suggestion the commission follows, that the Central of New Jersey should be included with the Philadelphia & Reading in System No. 3 built around the Baltimore & Ohio as a nucleus. A study of the relationships between the Reading and its controlled line would make it difficult to see any other solution than to include them together in the same system, whichever it might be.

The Central of New Jersey operates 686 miles of line, including lines owned, lines controlled and mileage operated under trackage rights. It is the only railway controlled by the Reading Company which is operated separately from the Philadelphia & Reading Railway. The Central of New Jersey in 1920 carried 9,634,411 tons of anthracite coal. In the same year it carried 9,550,006 tons of bituminous; in other words, the tonnage of hard and soft coal is now approximately equal. The anthracite coal is derived from mines in its own territory or is received from the Reading. It moves to Jersey Central territory, to New England via Phillipsburg, the Lehigh & Hudson to Maybrook and thence over the New Haven. Delivery in the case of the large movement to tide-

CENTRAL OF NEW JERSEY—NET TONS HANDLED

Year	Bituminous coal	Anthracite coal
1916.....	6,616,604	9,628,951
1917.....	7,542,625	11,040,273
1918.....	7,791,545	11,078,182
1919.....	8,060,793	9,496,781
1920.....	9,550,006	9,634,411

water is made at Jersey City, Elizabethport and in periods of heavy business at Port Johnson. The Jersey Central operates no barge lines, but the Lehigh & Wilkes-Barre Coal Company has such lines.

The bituminous coal tonnage handled by the Jersey Central is secured from the Philadelphia & Reading at three important connecting points: Allentown, Pa.; Haucks, Pa., and Bound Brook, N. J. The movement through Haucks is largely B. R. & P. coal, received from the New York Central at Williamsport. Inasmuch as this bituminous coal movement is described in the review of the Philadelphia & Read-

ing which appears also in this issue, it is hardly necessary to repeat it here.

The Jersey Central has an interesting problem in connection with the operation of the route constituted in the B. & O., Reading and Jersey Central lines between Wilmington, Del., and Jersey City. Freight is moved over this line on an engine-hour basis—there being one freight district from Philadelphia to Jersey City on Reading business, and from Willsmere near Wilmington on the B. & O. to Cranford Junction, N. J., or Jersey City.

The Central of New Jersey is like the Reading in many particulars. It is built to high standards and well maintained. Its suburban service out of New York, handling some 15,000,000 passengers annually, is characterized by the use of a large proportion of vestibuled steel equipment moved in heavy trains at high speed.

The Jersey Central is not in a position to secure as heavy freight train loading as the Reading. In 1920, its average revenue train-load was 710. This was an increase of 39 tons over 1919, but it compared with the Reading's 1920 figure of 906. The Reading was characterized as a terminal road; the Central of New Jersey is even more of a terminal than the parent company. The effect of the methods of operation necessitated has prevented a high daily car mileage. The miles per car per day in 1920 were but 13.9. The tons per loaded car were 34.2 and the net ton-miles per car per day were only 299. The average distance each ton was carried in 1920 was but 71 miles.

The Jersey Central, like the Reading, did not do well during federal control. Its standard return was \$9,352,301. In 1918 it earned a net railway operating income of \$6,268,096. In 1919 its net earned for the government was but \$1,384,554. In 1920 the property was operated at a deficit of \$5,852,417. The road is now carrying a fairly heavy traffic, presumably on account of the heavier anthracite coal movement. In the first six months of 1921, the net ton-mileage, revenue and non-revenue, was 1,099,943,000 as compared with a figure for the first six months of 1920 of 1,193,021,000. With increased rates and substantial reductions in expenses, the result has been a considerable improvement in net earnings. The net railway operating income for the first seven months of 1921 was \$4,171,917 as compared with a deficit for the first seven months of 1920 of \$1,411,910. The net railway operating income in July was \$1,098,407.

The road has made substantial additions to its equipment during the last year or two. It was allocated by the Railroad Administration 21 heavy Mikado and 10 switching locomotives and 500, 50-ton box and 1,000, 55-ton coal cars. In 1919 there were also received 500 box and 500 coal cars. In 1920 there were purchased and received 11 Mikado locomotives and 950 coal cars. Equipment trusts issued in 1920 increased the total funded indebtedness of the company at the end of 1920 by \$5,895,000 over the amount at the end of 1919.

The corporate income account for 1920 showed a deficit of \$2,528,481. Dividends were paid of 10 per cent and amounted to \$2,743,680, making a net deficit of \$5,272,161. In 1919 the corporation earned a net income of \$5,095,625. Dividends in 1919 totaled 12 per cent, or \$3,292,416, and the surplus for the year was \$1,803,209. The result of the deficit for 1920 was a reduction in the surplus account from \$8,942,343 at the end of 1919 to but \$3,327,079 at the end of 1920. This, however, is not quite as serious as it looks on its face to be. The corporate income account for 1920 includes under non-operating income, an item of \$5,146,411 representing receipts from the government on account of the guaranty period. This amount is equivalent only to slightly over half the standard return; it does not include the deficit in operation for the six months of the guaranty period which was of sizable proportions. It is very likely that were this

amount to be included that the year's deficit might be eliminated.

Referring to the dividends mentioned above, it is noteworthy that of the 10 per cent dividends paid in 1920, \$548,736, or at the rate of 2 per cent, were paid out of dividends received on stock of the Lehigh & Wilkes-Barre Coal Company and in 1919, \$1,097,472, or at the rate of 4 per cent. The income account for 1920 was not credited with an amount of \$551,811 representing the coal company dividend due December 27, 1920, because of a ruling of the district court. The court later assented to the payment of the dividend and it was paid by the coal company and included in the income account in February, 1921. This explains the 10 per cent dividends in 1920 as against the usual rate of 12.

The operating results for 1920 compared with 1919 are as follows:

	1920	1919
Mileage operated.....	686	686
Operating revenues:		
Merchandise.....	\$21,324,604	\$19,063,439
Bituminous coal.....	4,999,826	3,255,700
Anthracite.....	11,874,513	10,389,975
Passenger.....	9,399,107	8,164,830
Total operating revenues.....	51,681,799	44,837,302
Maintenance of way expenses.....	7,064,229	5,510,957
Maintenance of equipment.....	20,279,617	11,869,423
Traffic.....	449,982	322,112
Transportation—rail line.....	27,845,048	21,226,447
General.....	1,315,451	1,014,676
Total operating expenses.....	57,493,096	40,273,951
Net operating revenues.....	Def. 5,811,297	4,563,352
Railway tax accruals.....	2,933,251	3,096,466
Operating income.....	Def. 8,744,769	1,466,706

The corporate income account is as follows:

Standard return (January and February, 1920; year 1919).....	1,675,019	9,352,301
Net operating deficit (March to December 31).....	2,029,763	.....
Receipts from U. S. Government account guaranty period (March 1 to August 31).....	5,146,411	.....
Taxes.....	2,997,392	453,646
Rent for leased roads.....	1,962,685	2,326,645
Interest on funded debt.....	2,460,050	2,445,550
Net income.....	Def. 2,528,481	5,095,625
Dividends (10 per cent in 1920; 12 per cent in 1919).....	2,743,680	3,292,416
Balance of income account for year.....	Def. 5,272,160	1,803,209

## New Books

*Economics of Bridge Work* by Dr. J. G. L. Waddell. 6 in. by 9 in. 512 pages, illustrated. Bound in cloth. Published by John Wiley & Sons, Inc., New York.

The purpose of the author has been to cover the entire realm of bridge engineering from the mixing of concrete and the driving of rivets to the designing of the world's greatest bridges. There is reason to believe that the author's treatment of the more profound projects will meet with disagreement from some of the other leading authorities in bridge engineering and that they also will question the propriety of carrying comparative economic analyses to as definite conclusions as the author proposes, without recourse to the local conditions obtaining at the particular structure. However, this text contains a great fund of information of value to the engineer concerned with the design, construction or maintenance of bridges. In general the treatment is one of logic rather than mathematics. In few books does the author inject his own personality into the text as is done in the case of this work, so much so in fact that it gives the reader an impression of perhaps an undue reliance on the author's personal opinion. By the same token the prominence given to some of the more unusual problems encountered in the author's personal practice seems greater than is warranted by the frequency with which the problem would be encountered by the ordinary reader.

Following a general introduction of the subject, various chapters take up the promotion of bridge projects, market prices and alloy steels. Then follow separate chapters taking up the various types of construction used in bridge engineering, in some cases using direct comparisons between two



such types. Of these the chapter on the economics of cantilever and suspension bridges is written in a controversial tone which seems ill-suited to a text book. This chapter and the one on the economics of steel arch bridges were originally presented before technical societies, while the chapter on the economics of movable bridges appeared in an abstract in the *Railway Age* of June 17, page 1391.

Chapters on the economics of designing and other office routine and, in the latter portion of the book, on contract letting, inspection, shop work, erection, etc., may be said to comprise a detailed statement of the principles of good practice or sound management which of course in a sense implies economics. Chapter 41 covers maintenance and repair and includes an outline of the practice on the Chicago, Milwaukee & St. Paul with respect to the "classification" of old structures. Waterproofing is also treated in a separate chapter as is the economics of military bridging by Major-General L. H. Beach and Colonel P. F. Bond. In general, the text is matter that comes well within the ken of the engineer who is not a bridge specialist.

*Book of Standards—American Society for Testing Materials, 1921 edition, 890 pages, illustrated, 6 in. x 9 in. Bound in cloth. Published by American Society for Testing Materials, 1315 Spruce street, Philadelphia, Pa.*

In view of the large number of standards which are considered by this society at its annual meetings and the heavy expense involved in the printing of them each year, it was decided three years ago to publish these standards triennially. The present edition is the second issued under this plan and contains 160 standards. Among those of principal interest to railway officers are the specifications for steel rails, splice bars, track bolts and spikes; structural steel for bridges, for locomotives and for cars; carbon-steel bars for railway springs; billet-steel and rail-steel concrete reinforcement bars; axles, shafts and other forgings for locomotives and cars; wrought solid carbon-steel wheels; lap-welded and seamless steel boiler tubes for locomotives and boilers and firebox steel for locomotives.

*Proceedings of the American Railway Engineering Association. Bound in cloth or paper, 6 in by 9 in. 1092 pages, illustrated. Published by the American Railway Engineering Association, Manhattan Building, Chicago.*

This is the twenty-second volume to be published by this organization. This year's edition is somewhat smaller than those of previous years with the exception of 1919, and whether or not this is the result of a policy towards greater condensation or refinement of the material, the more compact form will unquestionably be welcome by most of those who have reason to consult this valuable engineering work. This volume contains the reports of 23 regular committees, which collectively covers practically every conceivable branch of maintenance of way. Two of the newer committees, namely, those on shops and locomotive terminals and economics of railway operation, present extended reports in this issue for the first time. The contents of this volume, covering the work of the 23 committees, is unusually diversified and contains a great fund of information on many different subjects. The reports of the committees on water service and track probably contain more varied subjects than the others. The volume includes two monographs, one on rail inclination and the standardization of track appliances on railways in France by W. C. Cushing, and one on rail laying with locomotive cranes on the Lehigh Valley by W. G. Barrett.

At WHITE PLAINS, N. Y., ten employees of the New York Central, with certain outsiders, have been arrested on charges of stealing merchandise from freight cars. A night yardmaster is said to have been the leader of the robbers.

## Letters to the Editor

*["The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated."]*

### No Disgrace to Be Poor

MOBILE, Ala.

TO THE EDITOR:

I have read the article entitled "Will the Mechanical Department Make Good?" in your issue of August 20, 1921. I resent the title of the article, from which the public may infer that the mechanical department of the railroads in the past has not made good.

Of course the mechanical department is going to make good, just the same as it has in the past. The mechanical departments of many roads are handicapped by the limited means available for making improvements that they know should be made. It must not be inferred, however, that the mechanical departments are in any peculiar manner lacking in ability to make good. It only resolves itself down to the old saying that while it is "No disgrace to be poor, it is very inconvenient at times."

A SUBSCRIBER.

### Stop the Leaks

SPRING VALLEY, N. J.

TO THE EDITOR:

In a noteworthy article in the New York Evening Post of August 16 W. J. Cunningham, J. J. Hill Professor of Transportation at Harvard University, lifts a corner of the blanket which covers the operations of the average railroad in respect to the handling of its material and supplies and gives us a peep at some of the concealed losses which are being incurred on nine-tenths of the railroads of this country.

Prof. Cunningham's life-long practical experience and intelligent study of the problems of railroad economics and operation constitute him an authority on such subjects, but while he touches on some of the less obvious of these concealed losses he does not, by any means, disclose all of them. There can be no question but what the railroads collectively are losing between one hundred and one hundred and fifty millions of dollars every year through their neglect of this branch of the service and their failure to grasp the underlying causes of these concealed losses and correct them. There is today no single phase of the railroad business where such large economies are possible as in the Service of Supply, and none to which so little intelligent attention and study is directed.

Prof. Cunningham points out clearly some of the losses incident to an accumulation of surplus, or unnecessary materials in the stock, which he estimates at about \$1,500,000 per annum on a typical railroad of 3,300 miles. He includes in his figures interest on the investment at 6 per cent and the losses due to depreciation and obsolescence, which he estimates at 10 per cent. He says nothing, however, about the original cost of the surplus material which, being unnecessary, represents an unnecessary expenditure, at least for the time being. Nor does he mention the cost of handling and accounting for this unnecessary material, which would not have been incurred if it had not been bought, nor the cost of transporting it over the line to the storage points, nor the value of the storage space unnecessarily occupied or the facilities used in handling it, which might have been profit-

ably employed in some other direction, nor of the added taxes and insurance charges due to its presence.

His estimate of losses due to depreciation and obsolescence is very conservative. It is probably safe to say that one-half of the unnecessary material is kept on hand for an unusual length of time—often for several years—and being handled over more or less frequently and left lying around in out-of-the-way places, becomes bent, broken, rusty, partially decayed or otherwise damaged by exposure, or is lost, misappropriated or wasted by being finally adapted to uses for which it was not intended, to the extent of 15 per cent of its original value. Applied to the whole quantity of surplus material this is equivalent to a loss of  $7\frac{1}{2}$  per cent. on account of damage and depreciation.

Obsolescence introduces a different element of loss. After standing around and occupying valuable storage space for years, being repeatedly handled to get it out of the way of the necessary material and at inventory periods, perhaps 15 per cent of this surplus material becomes useless through changes in standards and the adoption of more modern devices. It is finally consigned to the scrap pile and disposed of for 40 per cent, or less, of its original cost. This is equivalent to a loss of 9 per cent on the original value of the whole.

All of this surplus material has to be handled and accounted for in the same manner as if its purchase had been necessary. Under present conditions no railroad can handle, distribute and account for its material for less than 4 per cent of its cost if the work is properly done. As a matter of fact the cost of handling surplus material is always above the average.

The cost of transporting unnecessary material over the line is the same as any other and is, of course, a variable quantity depending on the distance it is moved to the storage points and the value of the material itself. Like the handling cost this charge is likely to be enhanced by the movement of the material from point to point in the effort to find a place where it can be used. It might be fair to estimate this cost at  $\frac{1}{2}$  per cent.

Taxes, insurance, the value of storage space occupied and facilities employed, additional labor at storage points in consequence of shifting the material repeatedly out of the way, all involve expense which it is impossible to allocate accurately, but it seems reasonable to place an estimate of 1 per cent on the combined costs arising from these sources.

We have then, as direct losses due to an accumulation of surplus material in the stocks:

	Per Cent.
1. Interest on the investment.....	6.0
2. Damage and depreciation.....	7.5
3. Obsolescence .....	9.0
4. Handling and accounting.....	4.0
5. Transportation .....	.5
6. Taxes, insurance, etc.....	1.0
Total .....	28.0

To be conservative the cost of carrying surplus material in stock at present may be stated as 25 per cent per annum.

During the year 1919, while the railroads were under federal control, it was definitely shown, by a comparison of the performance of the different lines, that the surplus stocks of miscellaneous materials, exclusive of fuel, rail and ties, amounted in the aggregate to \$135,000,000, which was over 28 per cent of the total investment in that class of material. The annual carrying charge on this unnecessary material, therefore, amounted to \$33,750,000, to say nothing of the money needlessly expended in procuring it.

One hundred and sixty-eight million dollars would buy a good many new locomotives, improve a great many defective engine terminals or pay dividends on a good many shares of stock. It might even occur to some one to use a small part of this wasted money, as Prof. Cunningham suggests, in offering some inducement to men of the requisite ability and experience to organize an efficient Service of

Supply and intelligently manage this large investment in material, which swallows up 36 per cent of the gross earnings, in a manner calculated to stop some of these leaks, which are apparent to every one except the average railroad executive.

The only sure remedy is a properly organized Service of Supply in the hands of a competent and adequately paid staff, entirely independent of the jurisdiction of the users of the material.

A few railroads have done this! Why not all?

GEORGE G. YEOMANS.

## College Men Not Wanted

OUT WEST.

TO THE EDITOR:

I have been following with much interest your discussion of the attitude of the railways toward college men. I am a college man and have been working for a large railway system for four years.

The great obstacle in the way of the college man entering railway service is prejudice. The railways are prejudiced against college men, their ways and their knowledge. The personnel all come from the "bottom." They were "call boys." When the college graduate is out of school he is mature and cannot earn his salt as a "call boy." But the exponent of the inefficient system of "do-as-you've-always-done" thinks that is where he should begin. He thinks even the college man cannot grasp a conception of the specialized knowledge except by long experience.

Railways have persistently spurned the advice of college men. They have repeatedly refused to make a place in their ranks for the graduate. As a result, the railways find themselves several years behind the pace set by most other progressive enterprises. It gives me no pleasure to contrast the wheezing locomotives, out-of-date methods of handling material, miles of belting in the shops, inefficient rows of line-shafting, cast-off locomotive boilers doing duty as heating systems with uncovered pipes, etc., with a modern plant with a motor at each machine, plenty of light, plenty of heat and systems of conveying material without waste of time or space.

The railways have made no place for the college graduate, and the university has no place in its curriculum for the railroad man. Until both have made concessions, I see no hope for a college graduate in the railway service. I do not blame the college man for entering more inviting fields of enterprise where he is better cared for.

A. R. A. CLERK.

## Unnecessary Transferring

### of Loaded Cars

NORTH PLEASANTON, TEXAS.

TO THE EDITOR:

It is truly refreshing to read the letter of R. R. Farmer in your issue of September 17 on the unnecessary transferring of loaded cars. At least one superintendent is awakening to the uncalled-for expense for switching, per diem and labor, caused frequently by an ignorant or a vindictive car inspector, to say nothing of the loss and damage due to transfer and the delay and inconvenience to the consignee. Consider our loss and damage freight claim payments—over \$100,000,000 a year. What does it cost to switch a car from the interchange track to the yard, from the yard to some convenient point for the transfer of the lading (another car switched opposite to, or by it), thence to the rip-track and back again? And how about empty cars set back for some technical application of a rule?

My experience with the Interstate Commerce Commission



and their inspectors is that they are broad-minded and intelligent, exerting themselves to keep business moving and to eliminate unnecessary expenses, but impressing upon us "safety first." I am afraid the real trouble is that the managers of the roads are so occupied themselves that they do not realize what is actually transpiring along these lines in their large terminals, and the mechanical departments for some unknown reason feel they must stand behind their inspectors.

This evil can be corrected if vigorous steps are taken, and I would suggest a check at some large terminal of the preceding three months to ascertain the ratio of setbacks and transfers as compared with the total number of cars handled. A disinterested commission should then be appointed to pass on every car set back or ordered transferred for a month. Probably the commission would have but little to do, but I feel sure there would be a considerable reduction in the ratio. In view of the many features and expenses involved it would be worth while to ascertain what the actual conditions are.

F. L. LEWIS,

General Superintendent San Antonio, Uvalde & Gulf Railroad.

## Give the Chief Clerk Free Rein

TO THE EDITOR:

I see by the paper we're at it again!

Officer vs. Chief Clerk!

Unfortunately instead of mutual admiration and recognition of each other's ability we find a feeling of antagonism. The boss and his chief clerk co-operate; if they did not one would get discharged and it's an easy answer as to who it would be. It is an ambiguous situation; cooperation with mutual antagonism.

The chief clerk could write reams of criticism about the boss, and vice versa. But the question of "why" still remains and an analysis of the situation on the part of both would probably do a great deal of good.

One can readily recognize the fact that the writer of the original "Chief Clerk" letter was a man in the operating department. That is, transportation, mechanical or maintenance of way. These are the fellows who plod along in railroad service for years, finally reach the apex of their particular line, the position of chief clerk, and what do they find? They are up against a stone wall that is insurmountable; a blind alley from which there is no avenue of escape unless they resign.

Why? Simply because the chief clerk to the superintendent of motive power has not passed through one of the mechanical trades; the chief clerk to the chief engineer of the maintenance of way has never had actual road service; the chief clerk to the general manager has never been a conductor or train master, etc.

It took fifteen years for the writer to reach his apex in railroad clerical work, two and one-half years to wake up to his "blind alley" situation and six months to secure a position away from railroad work. Eighteen years given to railroad work and absolutely at a stand-still. Couldn't possibly become a superintendent of motive power!

### Again, Why?

Perhaps the railroad official who answered the "Chief Clerk's" letter can answer. Perhaps he can say what a chief clerk can do to better his situation. It would be interesting to read his comments.

However, let's get back to the "mutual admiration society of officials and chief clerks." Each, without the other, would be hopeless. The chief clerk needs the guiding hand of the official and the official needs the detail of the chief clerk.

Of what avail would it be to a superintendent of motive power to make a killing on his "cost per mile for main-

tenance," if the chief clerk were not able to compile this statistical information and pass it on to the general manager? How could the superintendent of motive power handle the big things in his department if he were burdened with working out the infinitesimal details that his chief clerk handles? Who would handle the mass of correspondence that daily comes in and goes out? If the official would analyze the thousand and one trifling duties his chief clerk performs and add to that the hundreds of important duties the chief clerk must attend to, the society before mentioned would have a solid foundation to begin with.

I believe the antipathy (and there is no doubt but what it exists) has its origin in the shops or on the road. On the one hand we find the apprentice machinist who must work nine or ten hours a day, inside and outside, rain or shine, usually encased in oily clothes and generally mussed up in appearance. He is probably down in a greasy pit, sweating (not perspiring) and along comes a sleek-looking timekeeper with his white collar, clean hands and face. The clerk, afraid of getting soiled, is the very essence of "snubbery." The apprentice feels like the underdog and the clerk does nothing to disillusion him.

Again we have the track laborer toiling in all kinds of weather, and the chief clerk who approaches him.

The feeling engendered in that apprentice and that track laborer is with him subconsciously when he reaches the position where he has a chief clerk and it is this feeling that is responsible for the existing difficulties between the operating official and his clerk. If the official would recognize his chief clerk as a necessity instead of a necessary evil the first step would therefore be accomplished.

In my category of railroad officials (based on actual contact) I have three classes:

1. The "iron man."
2. The "don't give a d—n."
3. The "Big Boss" with the first and second eliminated.

The "iron man" was absolutely the dictator of his department down to the last man. A man of vigorous mental and physical power, an absolute wonder. But—he had one weakness and that was the fear that an officer higher than himself would propound a question pertaining to some problem that had been handled in his department and with which he was not familiar. The result was that he was "snowed under" all the time and while he was familiar with every detail under his management, nevertheless he was continually criticised for his delay in handling important matters.

The "don't give a d—n" man didn't last long. Golf, plus the desire to be out on the line the majority of the time, resulted in his chief clerk having to assume almost the total responsibility for his division. This man was a procrastinator and the least said of this type the better.

The third man was the "Big Boss" in every sense of the word. He did not rule with an iron fist, and still every one in the department knew who was boss. He would temper his criticism with advice and frequently would bring from his personal library data that would assist his chief clerk in understanding certain problems. He had time for everything and everyone. Why? Because he handled his work systematically. His chief clerk was no figurehead; he was an official in the department the same as the assistants. The morning mail would come in, files attached thereto, and the chief clerk would carefully go over it. At a certain hour each morning the chief clerk took all the correspondence in for conference. The boss would go over the papers with the clerk and instruct him how to answer certain letters, would keep some for his personal dictation and in that way dispose of all the mail.

His ability was readily recognized and today this big boss is bigger; he is in charge of the mechanical department of one of the largest railroads in the country. And don't for-

get, his several chief clerks while he was climbing the ladder of success helped him along.

Who answers the official higher up when a phone call comes in while the boss is away? Who looks after the comfort of the boss during his working hours? Who reminds the boss of his engagements and important business matters that must be attended to? Who gets rid of "callers" the boss has not time to see? Who assists the most in keeping the boss posted as to general conditions on the railroad and in his department?

And who is held responsible for the handling of the department in the absence of the boss?

The chief clerk does all this and much more. I am speaking of a type which is in every sense of the word a chief clerk. It is agreed that many incumbents in that position are incapable, but it is the dyed-in-the-wool chief clerk that I refer to. The man who can do great things in the department, if given sufficient latitude. Possibly "Operating Official" has been unfortunate (?) in his men.

Were I an operating official my greatest concern upon being promoted would have to do with my chief clerk. I would study my man and if necessary make changes until I found the right one. Then, instead of restricting him, I would give him the greatest latitude as I know my interests would be his and his attitude towards me (engendered by my apparent faith in his ability) would be of such a calibre that he would seldom go wrong.

Through this co-operative plan, I would be giving him his birthright; the opportunity of using his initiative.

Try it, "Operating Official!"

GRANT GIBSON.

## Forman and Ford

SAN FRANCISCO, Cal.

TO THE EDITOR:

What I wrote in your issue of September 24 relating to the 19 order was predicated upon just how far the average officer would be likely to go in the light of present knowledge or customs. No officer, I take it, would care to deviate from the Standard Code to such extent that his road could be held up as a horrible example should a collision result from some experiment which had not at the very beginning been fully worked out.

As surely as the next decade is going to see a searching investigation as to the components of concrete, with the view of overcoming its present unstable qualities, just so surely will there be made known the imperfections of our present cumbersome train dispatching system and more simple methods adopted. This may possibly result in the abolition of all written train orders. Delaying freight trains twenty minutes and passenger trains five minutes to secure signatures to train orders is so clearly wrong in principle as well as expensive and burdensome in results that relief therefrom is imperative and must eventually come about in some way.

If I were a Henry Ford and owned a railroad I should reason about as follows and would handle the train dispatching accordingly:

With the protection that the clearance card affords, made out as outlined in my letter of September 24, there should be no risk in using the unsigned order for any movement, provided it be further safeguarded by having the train order signal against the ruling train. Therefore the proposition is reduced to three general principles:

(a) There must be an order-signal which will stop the train to get the instructions.

(b) There must be a clearance card to insure that all orders issued by the dispatcher are delivered to the train.

(c) The instructions must be so clearly worded that they cannot possibly be misunderstood; and if firemen and flagmen are to be in any way held responsible for the proper

observance of train orders they must be given copies of them to retain.

When the order-signal, or its equivalent, cannot be depended upon, then, of course, acknowledgment from the conductor and engineman of the superior train must be obtained before authorizing the inferior train to move against it.

Provisions for the "X response" should not be eliminated from the new form, for the reason that it is needed at times. Neither should we omit the line on which to show when an order is "Repeated."

In religious circles one sometimes hears the expression, "If it is in the Bible, it is so." In railroad circles it is equally common to hear, "If it is in the Standard Code, it goes." Unlike the Bible, however, the Standard Code is not a finished book. A comparison of the original and present Standard Code rules will show that there have been changes—changes of a progressive nature. Devotees of this much-respected and feared document should bear in mind that even the Standard Code does not place any restrictions upon the use of the 19 form of order. And it makes no provision for the safeguard of a clearance card, to be given with all orders.

Just why every restrictive feature of the Standard Code makes such a strong appeal to everybody, while at the same time they do not endorse some of its more liberal provisions, is a problem too deep for the ordinary mind to solve.

For absolute safety the middle order is the greatest single safeguard so far devised, for the following two important reasons: (a) There are two order-signals against opposing trains. (b) It is a reminder at the most important place of all—the point where the trains are to meet. Use of the middle order is attended with unqualified success when dispatchers are permitted to instruct operators (holding such orders) to change the order-signal from "stop" to "proceed" to permit disinterested trains to pass the station without slowing them to secure a clearance card. The principal objection to the middle order, so far as I know, has been that having so many order-signals at "stop" causes delay to trains not concerned. I have made it a practice to instruct operators to change the signal as described and I know of no collision chargeable to this method of handling. It is to be frankly admitted, however, that to do so is, to say the least, a strained interpretation of Standard Code Rule 221 B.

When practicable to use it the middle order is the all-important thing; when its use is impracticable orders should be placed as near the point where they must be executed as is possible. Again, when practicable, dispatchers should refrain from issuing orders six or eight hours before operators are required to make delivery.

Telephonic dispatching is a great help which is not yet sufficiently appreciated. A telephone should be installed at every siding, without regard to the number of order offices open. Another improvement often unappreciated is to shorten the territory of train dispatchers, especially on heavy single track lines, so that they may have ample time to think and to do what is required of them without undue haste.

But where, after the adoption of the foregoing recommendations, dispatchers are permitted to become careless in the duty of underscoring each word and figure of a train order the instant it is being repeated by each operator; or habitually to read newspapers or books when on duty, there need be no hope of any such thing as safe handling of trains by the use of train orders.

H. W. FORMAN.

PENNSYLVANIA TRAINS departing from the Union Station, Chicago, will be held whenever the Adams street or Monroe street bridges leading to the station are open. If these bridges open within five minutes before the departure of any train, the train will be held in the station until five minutes after street traffic again begins to move over the bridge.

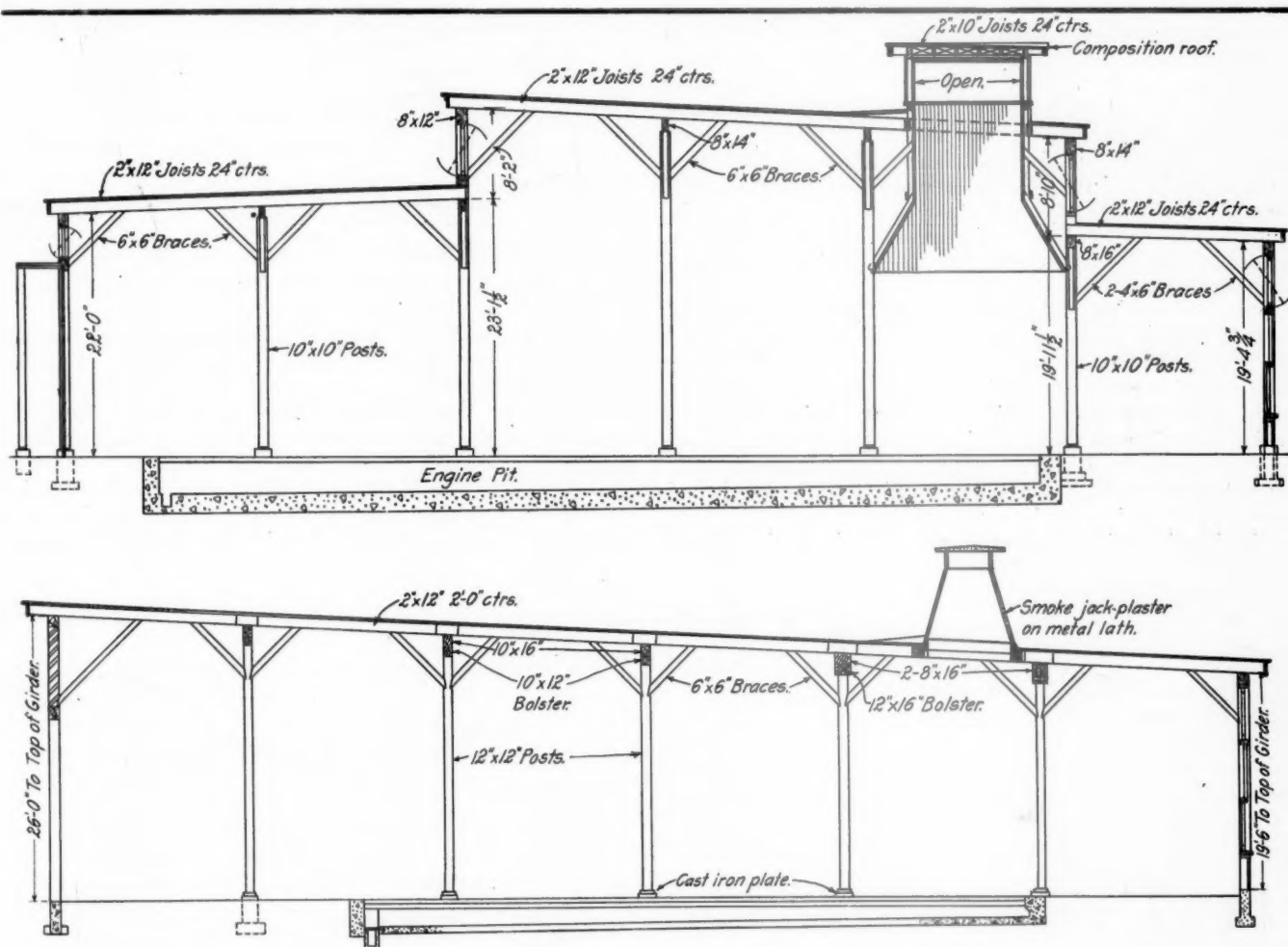


# Frisco Secures Maximum Benefit for Modest Outlay

## Series of Minor Projects for Second Track and Locomotive Facilities Expedite Operation

THE CAPITAL expenditures made by the St. Louis-San Francisco during 1920 and the early part of the present year for additional main tracks, grade revision and locomotive facilities, comprise a striking illustration of a minimum outlay for the maximum benefit. They serve as an object lesson in the character of improvements which may be undertaken during periods of restricted financing. In the case of second track this problem was approached by selecting those portions of the line where the greatest relief

and Kansas respectively. The main trunk traverses a rough country and was built with maximum grades of 1.25 per cent in both directions. The preponderance of traffic is eastbound, consisting of oil and products of agriculture, while the westbound traffic comprises manufactured goods together with an empty return movement of box and tank cars to compensate for the excess of eastbound traffic. The general program for the improvement of this line contemplates continuous double track from St. Louis to Monett with a revision grade whereby the ruling grade will be 0.8



Stall Sections Through Two Types of Roundhouse Construction Used by the Frisco

second track which would conform to a general plan for the ultimate second tracking of certain operating divisions. In the case of the locomotive facilities, the success of the program undertaken must be ascribed to the fact that the existing terminals provided ample opportunity for additions and extensions.

### Second Track Work in Four Units

Three of the sections of double track work prosecuted during the past 18 months are on the main stem of the St. Louis-San Francisco, extending from St. Louis southwesterly to Monett, Mo., near which point it divides into three important lines extending into eastern Arkansas, Oklahoma,

per cent in both directions. However, the schedule for the completion of this work has been drawn along conservative lines with the idea of providing initially only as much of the second track as will be designed to relieve those portions of the line subject to the greatest congestion. Consideration is also taken of the revision of grades in connection with the second track work which will prove of greatest immediate benefit.

The first step in double tracking the St. Louis-Monett line comprises that portion of the line between St. Louis and Pacific, a distance of 34 miles. This embraces the territory over which the Frisco maintains a suburban service into St. Louis and also comprises a region of frequent meeting





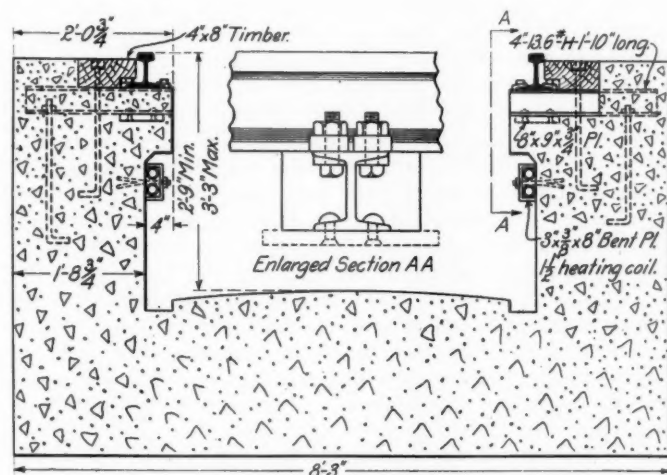
hands & Davis of Rogers, Ark. The grading consisted of about 50 per cent loose rock and 50 per cent earth.

On the 10 miles of second-track work between Olathe, Kan., and Spring Hill about 1.6 miles comprised the absorption of existing passing tracks. In addition to building second track the existing track was subject to a revision of grade involving the lowering of the summit cut a maximum of 12 ft., thereby changing the grade from 0.7 per cent to 0.5 per cent. The excavation consisted principally of earth but a shallow ledge of solid rock was taken out in the grade reduction. All the work on this project was contracted for to the Walsh Construction Company of Davenport, Iowa. The grade reduction material was handled by steam shovels with standard-gage, 12-yd. dump cars and unloaded from the main track. Some minor work was handled with an excavator and teams. The bridge work on all of the double-track projects was of a minor nature.

### Engine Terminal Work Undertaken

#### After Federal Control Period

Although a large amount of engine terminal and shop facility improvements and additions were carried out by the United States Railroad Administration, particularly on roads in the eastern portion of the country, very little work



Cross-Section Through a Typical Engine Pit

of this character was done in the southwest and this was notably the case with the St. Louis-San Francisco. As a consequence the end of federal control found this property in need of considerable additions to its locomotive facilities. Fortunately the existing terminals were in such condition that the required additional housing space could be added readily to the plants already in use and only in one or two cases was the construction of additions hampered by cramped quarters. Only four new terminals were constructed and these at relatively unimportant points. The wide distribution of the engine terminal and shop improvements will be appreciated from an examination of the map.

Taken in the aggregate, the new facilities included 24 stalls in four new roundhouses, 44 additional stalls in existing roundhouses and the extension of 18 stalls in two roundhouses. Of the 86 stalls built or extended, 6 were made 120 ft. long for use by Mallet locomotives, and 22 were 92 ft. or less in length, while the other 58 were made 110 ft. long, which is the present standard of the road for the housing of Santa Fe type and heavy Mikado locomotives. These standard stalls are generally equipped with engine pits 80 ft. long.

A total of eleven 80-ft. engine pits were constructed on radial tracks outside of the roundhouses. At three of the roundhouses 75-ft. turntables were replaced by 100-ft. tables,

while at two of the small new houses turntables of 75-ft. and 70-ft. lengths respectively were installed. Additions to the shop facilities were of a minor nature, consisting of four or five shop structures 40 ft. wide by 100 ft. long, and a shop building 60 ft. by 200 ft. at Enid, Okla.

The additions to roundhouses, as well as new houses built, were entirely of frame construction according to the general character illustrated in the longitudinal sections shown. These were of two general types, flat-roof type and a monitor type. As far as possible the roundhouse at each place was extended in a construction similar to that previously built. The smoke jacks have been proportioned for large discharge.

The section of the typical engine pit illustrates in particular the manner in which the rails were attached to the pit walls through the agency of short sections of H-beams embedded transversely in the concrete. All of the improvement work on the St. Louis-San Francisco was conducted under the general direction of F. G. Jonah, chief engineer (St. Louis, Mo.), to whom we are indebted for the information presented above.

### Report on A., B. & A. Derailment

THE INTERSTATE COMMERCE COMMISSION has issued a report dated September 28, on the derailment of an eastbound freight train on the Atlanta, Birmingham & Atlantic, ten miles east of Atlanta, Ga. (at Cascade Crossing) on September 7, when the engineman was killed and three employees were injured. This is the derailment concerning which the governor of Georgia appointed a special investigating committee, at the request of former employees, who had left the road on strike several months ago. It will be recalled that this special committee, rejecting the claims made by the strikers, reported that the derailment was due to an explosion. The present report confirms this.

The derailment occurred about 8:30 p. m. It was at the foot of a descending grade and in a cut. The track was found in general fairly well maintained. The train was moving at about 15 or 20 miles an hour, having had special instructions from the train dispatcher to run cautiously because of expected trouble.

The locomotive ran only 223 ft. after it jumped the track. It was overturned and the pilot was torn off. The left front truck wheel was missing, and was found at the top of the embankment about 120 ft. east of the point of derailment. The locomotive was very slightly damaged and bore no marks to indicate the cause of derailment. The track was badly torn up, the rails displaced and the ties scattered. There was a bowl-shaped crater in the ballast beneath the left rail, about 4 ft. in diameter and 18 in. deep. The rail immediately over this hole was slightly bent and a piece 3 ft. long had been broken out of the inside of its base.

The weight on the front truck wheels was about 19,700 lb. The running gear and the underside of the engine bore no marks which would indicate the cause of the derailment. Parts of broken pilot slats were found about 429 ft. away. The axle and the right-hand wheel remained in place in the truck frame. Many persons living within 4½ miles of the point of accident heard the sound of an explosion at the time of the derailment; and the surviving trainmen heard it.

A chemist, arriving on the scene at about 5:45 p. m. on the day following, found a fragment of wire and other things, and evidence of chlorate of potash and sugar. These two substances, together, form a high explosive. He concluded that this substance had been set off by a dynamite detonator. The left wheel, which strikers had claimed was

loose and had been the cause of the derailment, was taken to the shop and was forced back on to the axle and then forced off again; and the opposite wheel was also forced off; and from these and other experiments it was shown that the wheel, which had run only about 1,400 miles, could not have been loose on the axle.

The conclusion of the report says that the evidence is strong that an explosive was placed between the head and the base of the left-hand rail; that this lifted the left forward engine truck wheel and forced it outward and upward. The chiller marks on the wheel made an impression on the head of the rail. The axle from which the wheel was blown off was slightly bent.

James E. Howard, engineer-physicist of the commission, made an investigation and a report supplementing the foregoing. He calls attention to the fact that 40,000 lb. per square inch is not an unusually high pressure to be exerted by a high explosive. A pressure of 200 lb. per square inch on the inner base of the wheel would have been adequate to remove it from the axle.

## Proposed National Stop- Look-and-Listen Campaign\*

By Marcus A. Dow

General Safety Agent of the New York Central Lines

**U**NDoubtedly, grade crossing accident prevention presents one of the most difficult problems in railroad safety work. The public cannot be reached effectively by any individual railroad. The avenues of approach are difficult. The people who might be reached today are supplanted by others who cross your tracks tomorrow. These people do not confine their traveling to a limited area and they are not familiar with your crossings. The growing record of deaths and injuries; the steadily increasing expense to railroads and the lamentable loss to the nation each year of hundreds of its highest type of citizens should awaken both the railroads and the public to the need of a concentrated effort to curb the carelessness that is largely responsible. If a campaign is to be made effective at all, it would seem to be absolutely necessary for every railroad in the country to join.

1. Such a campaign should officially cover a period of say three months and be conducted at the time of the year when extensive touring is done.

2. Notify the general public through the press and ask their co-operation. An article for the press should be prepared by a special committee and distributed to all railroads to be sent to the local papers on each road; to be submitted to the papers in person by the local agent in the smaller cities and towns and by the most influential officer in the larger cities. Follow up articles could be used.

3. In a similar manner advise automobile clubs, rotary clubs, chambers of commerce, etc.

4. The secretary of the Safety Section should obtain a monthly report from each railroad, at the end of each month, of the number of persons killed and injured in crossing accidents; such information to be used in advising the public through the press, automobile clubs and otherwise of just what the monthly toll of human life amounts to because the rule of Stop, Look and Listen is disregarded.

5. Inexpensive but effective posters should be designed by a special committee and posted in every passenger and freight station on every railroad in the country. Also posters to be distributed for posting to automobile clubs, etc. Local agents should personally handle such distribution.

6. Distribution to automobile drivers of a warning notice,

printed on a small slip of paper . . . This warning slip should be personally handed to the automobile driver by a railroad representative. Crossing flagmen, station agents, freight agents, safety committee members and others should be furnished with a supply, a record kept of the number furnished the employee and report made to some officer or to the safety committee on the division of the use each employee made of his supply. Hundreds of thousands of automobilists could be personally reached in this manner.

7. (a) Posters to be used on stationery. (b) Stickers to paste on windshields.

8. (a) Endeavor to get the International News or similar agency to include in one or more of its illustrated news posters, appropriate photographs and descriptive matter. (b) Make an effort to interest the motion picture news weeklies. Smash up an old automobile in a fake crossing accident; photograph such a scene and run it in the theatres.

9. Seek the co-operation of the secretary of state or state automobile license bureau, or similar public office, in the distribution of a special warning notice printed on a card to accompany the license plate when delivered. This should be attended to in time to have the distribution made with the next license plate. I have tried this and believe considerable attention is paid to it. I have found the secretaries of state in the states on our lines are glad to co-operate.

10. The co-operation of churches and schools should be solicited. A special form of letter should be prepared to be sent to proper officers of schools and churches.

11. For publicity purposes, early in the campaign, on a certain day to be specified, every railroad should assign observers at one or more grade crossings for a period of five or six hours. The information thus gathered when used in connection with a nation-wide campaign would be most enlightening, and would be given wide publicity. It should be sent by wire to the general headquarters of the A. R. A. for prompt distribution to the press of the country.

12. The B. & O. plan of checking automobilists is worth considering in connection with a national campaign.

So much for the traveler-on-the-highway; but railroad officers and employees have responsibilities no less important and the campaign should include a careful check of all those employees and departments of the railroad who can in any way contribute to the success of the campaign. (a) Locomotive engineman should receive a personal letter from the superintendent. (b) Station agents should receive special instructions to co-operate. (c) Crossing flagmen must be personally interviewed and instructed by the official to whom they report; make them feel a personal responsibility so that each one will resolve not to have an accident on his crossing during the campaign. (d) All trainmen and conductors to be notified of the campaign and be instructed to protect crossings while switching over them. (e) Maintenance employees to correct defective planking, or other conditions that might stall an automobile. (f) An inspection of crossings by proper officers to observe obstructions to view, such as trees, that should be trimmed or removed.

The foregoing suggestions for a national campaign do not involve any great expense. The printing of circulars, posters, etc., would be nominal for each road. The main thing is to have the full backing and enthusiastic support of the officers of each road and I believe the safety men of the roads could put such a campaign over. We, who are in the railroad safety work have found that continuous and systematic efforts have reduced the number of deaths and injuries to railroad employees. Our most effective weapon has been an appeal to the human heart. Surely human beings are alike everywhere and if, by a great united effort, we railroad men of the country can inject some of the spirit of safety into the hearts and minds of the motorist we shall render a great service to the railroads we represent, to the citizens of our communities and to the country we love to call our own.

\*A paper read before the Safety Section of the American Railway Association at Boston, September 26; abridged.—The Boston meeting was reported in the *Railway Age* of October 1, page 629.



# Can Railroads Compete With Contract Shops?

## Costs of Repairing 50 Cars in a Railway Shop for Comparison with Contract Cost of Similar Work

By J. W. Roberts

President, Roberts-Pettijohn-Wood Corporation, Chicago

[In a preceding article the author outlined the bases under which the cost of repairing 50 box cars in a contract shop was compared with the cost of similar repairs to 50 cars of the same series carried out in the shops of the owning railroad. The present article discusses in detail the elements of cost of the work done in the railroad shop.—EDITOR.]

THE CARRIER does not accumulate in its records the costs pertaining to individual repair jobs, and it was therefore necessary to examine the details and build up the costs from the beginning. The carrier's local officers and employees who were intimately familiar with the particular work the cost of which was sought, as well as the records relating thereto, rendered enthusiastic co-operation throughout, to the end that the findings might be consistent with the facts.

### Shop Labor—Direct

Direct labor on the 50 test cars, by crafts, was found as follows:

Carpenters .....	\$11,636.00
Steel workers .....	426.00
Blacksmiths .....	365.50
Air brake men .....	280.00
Painters .....	240.00
Door makers .....	140.00
Total .....	\$13,087.50

Carpenter labor was taken directly from the daily service cards turned in by the workmen, which fortunately had been continued in use as a relic of the former piece work system, which showed the individual cars worked each day and the time devoted to each operation on each car. Total time reported was checked against the payrolls. Service cards were not required of the other craftsmen, however, and it was necessary to use an average cost per car for these respective classes of labor. All cars repaired at the shop during the period when the test cars were under way received substantially the same kind of repairs. The test cars, however, were among those receiving the most extensive repairs. The total hours worked during the period by each class of direct labor other than carpenter labor, was divided by the total number of cars repaired, and an average cost per car found. This average cost in each instance was multiplied by 50 and the result assumed to be the cost of labor. This is conservative, and undoubtedly understates the actual cost since the box cars required the maximum amount of labor. Open top cars required less painting, many cars did not have draft arms applied, some cars did not require two new side-doors as did the test cars, and some cars were not completely re-ripped for air as were the box cars. The labor thus arbitrarily determined is only 11 per cent of the total direct labor.

In addition to the foregoing, certain work was done in other departments which did not record the time devoted thereto, to wit: steel men riveting coupler yokes, steel men rectifying body bolsters, reclamation shop recovering 16 journal box and 4 column bolts. The cost of each of these operations was determined from a performance time study and the application of the standard rate of pay, resulting in a total charge of \$3.71 per car, or for 50 cars. \$185.50.

### Shop Labor—Indirect

Indirect labor in each department each month has been apportioned on the basis of the departmental direct labor. For instance, mill foremen and mill men have been distributed on the basis of carpenter labor; rip track foremen, laborers, material and supply men, drill press and bolt threaders, and box packers, on the basis of repair track labor exclusive of carpenters; and assistant general foremen, clerks and watchmen on the total labor to which such expense was common.

The total indirect labor charge assigned to the 50 cars amounts to \$4,395.31.

### Shop Expense

The total shop expense charged against the shop for the four months during which work was under way on the test cars was as follows:

Labor .....	\$53,896.36
Operating materials and supplies.....	11,852.68
Fuel .....	29,421.15
Electric current consumed.....	5,604.60
Ice .....	959.65
	<hr/>
	\$101,734.64

These charges include nothing for haulage of the fuel used over the rails of the company. The tonnage of fuel used was ascertained, likewise the distance hauled over the carrier's line from the normal source of supply, and haulage cost was computed at the rate of seven mills per net ton mile, resulting in a surcharge of \$4,099.53 as the cost of transportation. This increased the shop expense for the period to \$105,834.17. The cost of transporting materials and supplies is necessarily omitted because of inaccessibility of the data as to weight and point of origin.

Shop expense was apportioned to the test cars and other work on the basis of assigned shop labor, \$2,383.31, being assigned to the test cars.

### Insurance Expense

The premium paid on commercial policies for fire insurance and the accruals to the carrier's own insurance fund to protect the margin between the insurance carried and the amount of hazard on the insured facilities comprising the shop layout, was reduced to a monthly basis and distributed on the basis of assigned shop labor. The apportionment to the test cars amounted to \$13.23.

### Maintenance of Shop, Power House, Machinery, etc.

The total expense for four months charged to accounts, 302—Shop Machinery; 304—Power House Machinery; and 335—other expenses, representing the actual expenditures during the test period at the shop in question, was apportioned on the basis of assigned shop labor, resulting in \$1,317.07 being assigned against the test cars. The records did not lend themselves to analysis in such a way as to permit of averaging the machinery maintenance expense for a longer period, which apparently would have increased the charge somewhat.

### Maintenance of Buildings and Tracks

The labor and material charged during the calendar year 1920 against the maintenance of the buildings and tracks

comprising the shop facilities was taken as the basis for ascertaining cost of maintenance of these facilities. The total charges were reduced to a four months' average and this amount apportioned on the basis of assigned shop labor, which assigned \$235.89 against the test cars.

In the charges thus distributed nothing was included for transporting the materials used over the carrier's rails, which could not be computed for lack of detail as to material quantities. The records were not always kept in such detail as to show the facilities to which repairs were made, and repair expense not described may have applied to the facilities in question. Cognizance is taken only of the charges identified to the facilities involved.

#### Maintenance Expenses Common to all Local Shops

Other shops than the one in which the test cars were repaired are located at the same point, and during the year 1920 account 235—Shops and Enginehouses, received charges common to all such shops. The charge for the period was reduced to a four months' average, and then distributed on the basis of assigned shop labor (less superintendence) in all shops, resulting in a charge of \$57.91 against the test cars.

#### Divisional Overhead—Maintenance of Way and Structures Expense

During the calendar year 1920 the divisional overhead charges applicable to maintenance of way and structures expense (exclusive of accounts not benefitted thereby, as for instance, Account 275—Insurance) were as follows:

Account 269—Roadway machines .....	\$17,346.48
Account 271—Small tools and supplies.....	26,413.11
Account 274—Injuries to persons.....(Cr.)	253.97
Account 276—Stationery and printing.....	1,916.20
Account 277—Other expenses .....	157.25

Total .....\$45,579.07

This annual overhead expense was apportioned on the basis of its relation to the total maintenance of way and structures expense supervised and \$6.27 assigned to the cost pertaining to the test cars.

#### Entire Line Overhead—Maintenance of Equipment Expense

Superintendence and other overhead expense applicable to maintenance of equipment during the calendar year 1920 was as follows:

Account 301—Superintendence .....	\$458,267.75
Account 332—Injuries to persons.....	55,206.26
Account 334—Stationery and printing.....	41,392.11

Total .....\$554,866.12

A relationship between total overhead expense and the total expense supervised was found and on the basis of this relationship the supervised expense assigned against the test cars was applied, resulting in a charge of \$1,720.22 against the test cars.

It should be mentioned that divisional overhead expense relating to maintenance of equipment is consolidated with system charges by the carrier and could not be segregated and separately accounted for without a prohibitive amount of work. The consolidation of the expense before apportionment reduces the proportion which would otherwise be assignable to the work in question.

#### Entire Line Overhead—Maintenance of Way and Structure Expense

The charge against the test cars for system overhead applicable to all maintenance of way and structures accounts, as represented by the charges to Account 201—Superintendence, was predicated upon the equitable distribution of the total charges to this account on the basis of the total ex-

penses supervised, using the experience of the calendar year 1920. The relation of superintendence to total expense supervised was 4.838 per cent and the amount assigned to the test cars was \$14.79.

#### Entire Line Overhead—Repairs of General Office Buildings and General Storehouse

The identifiable expenditures for repairs to system general office and general storehouse buildings and appurtenances during the year 1920 were collected, and their relation to total operating expenses (less common to system repairs) and expenditures for additions and betterments was found, and on the basis of this relationship the costs assigned to the test cars were surcharged pro rata, the amount assigned for expense of this character being \$2.36.

#### Entire Line Overhead—System General Expense

System general expenses for the year 1920, comprising the items included in the various primary accounts under the sub-division "General," above referred to, were found to be equivalent to 3.4733 per cent of the total expenditures for other operating expenses plus the expenditures for additions and betterments to road and equipment, excluding the adjusting credits for property retired and the amount of liability for certain equipment allocated by a governmental order which involved no general expense during this period on the part of the carrier's organization.

The charges assigned to the test cars were burdened with this per cent for system general expense, amounting to \$2,436.20.

#### Mounting Car Wheels

In connection with the work in question thirty-one sets of 33-in. car wheels were mounted on axles. This work was done in a department which merely allocated the time worked upon different operations to each operation. During the four months' period in which the test work was done the average cost of mounting car wheels was found to be \$2.61 per set, which for 31 pairs amounted to \$80.91, which has been included.

#### Depreciation on Fixed Properties

The carrier does not exercise the option of accruing currently depreciation on its fixed properties. In view of the demonstrable fact that the maintenance policy of the company does not perpetuate the life of such property, but that deterioration not offset by current repairs does accrue, and that obsolescence and inadequacy cause a gradual consumption of the value of the assets, depreciation, as commonly regarded for accounting purposes, is considered to be an element of actual cost. It is believed to be fair to include an allowance for it in this case particularly, because of the apparent subnormality in the amount of repairs made to the property, due to its comparative newness and the influence which tended to retard maintenance expenditure during the test period.

Depreciation was therefore computed upon buildings (not tracks) and depreciable machinery (excluding all items usually replaced at the expense of repairs) used in the repair of cars. The base used for computing depreciation on each item of property was the original cost, computed by the carrier's valuation engineers if not of record. A rate was used in each case which took cognizance of the character of each item of property, and was based on experience as to the life expectancy of such property. The rates used were taken from a table promulgated by the United States Railroad Administration for use of car builders in computing cost of work performed under cost-plus contracts and which were subsequently adopted for use by many builders.

While the rates of depreciation used are considered fair and equitable for the car-building industry, they are prob-



ably too conservative for railroad use, inasmuch as they do not recognize to the full extent the effects of obsolescence and inadequacy upon the railroad properties, which is more marked than in outside plants. The need for relocating railroad shops to correct defects in original location, to make room for the expansion of other facilities and to meet the shifting requirements of operating conditions is wholly ignored in measuring life expectancy as represented by the percentages used.

The depreciation accrued for the four month period, for the freight car shop and machinery, the storehouse and appurtenances, and the powerhouse, machinery and appurtenances, respectively, was distributed on the basis of the assigned labor to which applicable, resulting in a total charge of \$332.33 being assigned to the cost of the test cars.

#### Applied Materials

The quantity of applied materials was carefully developed in minute detail with respect to each of the test cars. The piece work record form on which carpenters' time was reported also noted the quantity and kind of material used by them on each car; a record was also kept of the character of repairs made to each car. The material reported as used was checked against the work record showing operations, and from the latter record a list of minor items not reported, which of necessity were used in the repairs as made, was compiled in conjunction with the local officers and car foremen of the carrier. The different items of material were totaled and priced out from the storekeeper's and purchasing department's records at prices f. o. b. the carrier's rails at points of delivery. The net weight of each item was computed, the distance hauled over carrier's line from point of delivery thereto to the shop where applied was ascertained and net ton miles figured, and the cost of haulage calculated at the rate of 7 mills per net ton mile.

The prime cost of the materials applied was found to be \$45,158.96; the cost of haulage by the carrier \$1,481.43, the aggregate sum of \$46,640.39 being used as the cost of applied materials delivered for application.

It will be observed that any losses resulting from materials spoiled in fabrication have been omitted; likewise losses due to shortages in shipments, breakages in handling and like causes. Neither has anything been included for inventory adjustments, which are usually disposed of on the basis of material issues during the period between inventories.

#### Proportion of Fixed Charges

It was not possible to ascertain the taxable value of or the actual investment in the units of property devoted to shop purposes. It was likewise impossible, as may be expected, to secure the same information with respect to units of property used incidentally in connection therewith. Without such facts, moreover, it was impracticable to make direct application for the fixed charges related to the shop properties and the properties used in furnishing incidental service thereto.

During the year 1920, for each dollar disbursed as operating expense, as designated by the Interstate Commerce Commission's classification, the carrier had a further outgo of 20.0809 cents for fixed charges, consisting of taxes, interest on capital obligations, operating losses (uncollectable revenues) and rentals paid for the use of property owned by others (which is tantamount to interest on investment). This is a part of overhead expense. The outside contractor recovers his outlay on account of these items through charging a profit. In the railroad's case it must be provided for out of earnings and must therefore be reckoned with the more primary costs of services. This overhead burden being inherent to railroad operation, it must be considered at all times as a part of the cost of every operation performed in-

volving the use of property and inter-departmental service.\* For lack of a more equitable basis for disposing of this element of cost of doing business, it has been assigned to the test cars on a pro rata basis, with the belief that, notwithstanding the rough-and-ready method employed, it nevertheless does substantial justice to the situation in arriving at a comparable cost.

It is well to recall, in this connection, the previous statement that the productivity of the carrier's shops was not lessened within the period fixed by the necessity, real or apparent, of sending work to an outside shop in order to have its equipment repaired and in usable condition. Investment in its own facilities was not therefore made non-productive to any extent, nor were operating or administrative overhead expenses made unduly burdensome to activities to which they were incident.

The fixed charges include taxes, uncollectible revenues, which are operating losses, the net debits for hire of equipment and for joint facility rents, interest on fixed charge obligations and interest on certain cumulative adjustment bonds. There is not included in the sum dealt with the rentals on properties other than joint facilities, the sinking and other funds which pertain to disposition of surplus rather than accruals of contingent or unmatured expenses, losses on separately operated properties or interest on income bonds.

Application of the factor of 20.0809 to the accumulated cost of repairing the test cars results in a surcharge of \$14,640.82 for fixed charges.

#### Salvage Credit for Materials and Scrap Recovered

The recoverable material salvaged from the repaired cars was carefully accounted for, its weight ascertained, credit calculated at 75 per cent of the current cost new of usable material and at current prices for scrap, and the account credited with \$4,399.50 for the 50 cars. The cost of handling is not deducted in this connection, as the expense was included in overhead accounts and was distributed as such.

#### Total Costs In Carrier's Shop

The total costs assigned to the 50 cars repaired in the carrier shops are briefly recapitulated here, but are later given comparatively and in more detail.

Total rebuilding costs.....	\$72,909.19
Proportion of fixed charges, as assigned..	14,640.82
Less salvage credit.....	—4,399.50
<b>Total .....</b>	<b>\$83,150.51</b>
<b>Average cost per car.....</b>	<b>\$1,663.01</b>

[The next and concluding article will set forth the items of cost to the railroad of the repairs to 50 cars made in the contract shop, and will compare them with the costs of the work done in the road's own shop.—Editor.]

A PASSENGER COACH on the Corsicana-Mexia Oil Special of the Houston & Texas Central line of the Southern Pacific, broke its coupling as the train was leaving Mexia on September 22, and ran wild for 8 miles. The runaway coach was finally stopped on an up-grade and was later recoupled to the train. A number of men who jumped from the coach were badly bruised.

TRAIN NUMBER FIVE of the Atchison, Topeka & Santa Fe was stopped by six robbers near Edmond, Okla., on the night of September 28, and the mail clerks were forced to deliver to them four pouches of mail. Following the robbery a reward of \$30,000 was announced for the capture of the robbers, \$5,000 for each of the six men. A motor car, which was waiting nearby, was used by the robbers to escape.

\*Expenditures chargeable to capital account are excludable from consideration in connection with this burden, because the accounting rules provide for interest and taxes being included in the construction cost of new work.

## One Senator's View of Strike Threats

THAT NOTHING so retards industrial revival in this country today as the attitude of organized labor in refusing to come down to reasonable wages and a reasonable basis of employment, was the opinion expressed by Senator Nelson of Minnesota in debate in the Senate, October 1. "All over the United States we are suffering because of that situation," he said. "In the case of transportation, the railroads are unable to reduce the rates because of the high cost of operation arising from excessive wages which their operatives demand, and which they were accustomed to receive during the war under the administration of Mr. McAdoo as director general of the railroads. Until there is a reduction in that high scale of wages and a change in the demand as to limited hours and other peculiar conditions, including the bonuses which were provided in the days of the war, the outlook for the people of this country securing cheaper transportation rates and better facilities is hopeless, and without cheaper transportation rates there will not only be a failure of industry to revive as it ought to revive, but, more than that, the farmers of this country will labor under a severe handicap.

"Aside from the railroads, I cannot conceive of any industry where there is a greater opportunity for revival, for an increase of activity in all directions, than in the building trades. We all admit that there is a scarcity of buildings throughout the country, but the high cost of labor and the high cost of material—and labor is a factor in that high cost, in fact, labor is what makes building material high—deters building operations.

"We are now threatened with a railroad strike. The men have taken a vote, and they are posing as ready to take the whole country by the throat again, as they were at the time the Adamson law was passed. Let me tell you a little incident.

"You all know that I was born in the little mountain country of Norway. It is a poor country, and practically all the railroads in the country are owned and operated by the government. Last winter the men who work on the railroads concluded to have a strike there. They laid their heads together, and undertook to tie up all the railroads in that country. What happened?

"The business men in the cities and the high officials of the railroads managed to operate enough trains in the country to carry the mails and bring supplies and provisions to the cities, so that there was no suffering, and then they let the strike go on. The strikers were all the time desiring to negotiate with the government. The government said, 'We will not negotiate with you until you quit striking;' and at the end of 14 days they were glad to lay down their arms and glad to come back to work and glad to resume their duties, as they did. I venture to say that that experience of 14 days was such a lesson to them that they will never again call a strike.

"I am getting tired of these strike threats. With that matter in view that came under my observation, I do not know but that it would be a good thing for the country if these railroad men should start on a strike. Let the people of this country once for all understand what these men mean by their striking. Let the people realize that they will be deprived of their food supply, their fuel, and everything else. If these men ever embark on a strike that leads to such results, I venture the prediction that the American people will rise in their might and wipe them from the face of the earth.

"We cannot tolerate in this country a government or a rule stronger than the people of the United States. We cannot tolerate a government within a government. We cannot afford to have any people take our country by the throat and say, 'You must do as we want or we will destroy everything in this country. We will hold up the entire transportation system of the country and deprive the cities and the towns of their fuel, their food supply, and everything else, unless you

do as we want.' It is time that we taught these men the lesson that they are not bigger than the government of the United States."

## Brotherhood Leaders

### Count Strike Ballots

LEADERS of the Brotherhood of Railroad Trainmen have undergone a decided change of heart as to their threatened strike during the past week if the interviews which have been published in the press properly express their views. But a few days ago, during the first days of the official count of the strike vote of that organization at Chicago, officers of the union openly declared that if the result of the vote indicated that a constitutional majority of the men signified a desire to strike the walkout would be called immediately. Later statements indicated that the officers of the trainmen's organization lost their belligerency and despite the fact that the announced result of the vote showed that about 90 per cent of the men had signified their willingness to strike in protest against wage cuts, it was quietly announced that the actual calling of a strike would be left to the grievance committees of the various railroads.

On September 12 Mr. Lee sent a circular letter to the men, who were then in the midst of the balloting, in which he pointed out five reasons why he thought a strike would be unwise and why the men might expect to accept some wage reduction.

"The executive of the labor organization that fears to tell the truth or point out dangerous places ahead to the membership of his organization is not worthy of the title of leader," Mr. Lee said. He then asked the men to consider the fact that wages and working conditions of all classes established since 1918 were "the result of a world war such as never before known"; that 5,000,000 men are now unemployed; that "nearly all classes of labor have been forced by mediation, arbitration, strikes or lockouts to accept reduced rates of pay during the past year; that the increased wages granted railroad men last year were based on increased cost of living and that government reports indicate a 16 per cent cut in living costs since July 1, 1920."

Mr. Lee's letter, however, apparently has failed to influence the voting, approximately 90 per cent of the men voting to walk out.

Several days later Mr. Lee announced that if the strike vote cast by the members is upheld by the grievance committees, a tentative strike order would be issued, effective only when and only if the other organizations should walk out at the same time. Thus Mr. Lee has shifted the responsibility for whatever might happen first to the members of his organization, then to the grievance committees and lastly to the other train service organizations.

On October 3 the other three train service brotherhoods and the Switchmen's Union of North America began the count of their ballots at Chicago. The result of these counts, according to union officers, indicate that a large vote in favor of a strike will be registered. However, in the case of these organizations the actual calling of a strike is in the hands of the executive officers.

The 400,000 members of the federated shop crafts voted for a strike several weeks ago, but their officers, apparently awaiting a move on the part of the brotherhoods, have taken no action.

A FIRE in the car shops of the Missouri, Kansas & Texas at Wichita Falls, Texas, on September 20, damaged the woodwork mill, several freight cars, a crude oil tank and the entire machine shop equipment—estimated loss, \$75,000; cause, unknown.



# The Division of Interline Passenger Fares

Explaining the Uniform and Simplified Basis Proposed  
by the R. A. O. A. Passenger Committee

By L. C. Esschen

Auditor Passenger Receipts, Illinois Central

**D**URING THE PERIOD of federal control there was in effect a simplified plan for apportioning inter-road passenger revenue that was devised by committees of passenger accounting officers and observed by all carriers under federal control from June 1, 1918 to November 30, 1919. Under this plan the total monthly interline ticket sales of each carrier were apportioned on a basis of the passengers carried one mile accruing to the initial and all other interested carriers and yielded the same average revenue per passenger per mile to all the carriers concerned in such sales. With

method that was a very radical departure from past practices led the passenger committee of the Railway Accounting Officers' Association to believe that it might be possible to devise some other simplified plan that would be acceptable to carriers throughout the country and get away from the intricate bases that are now in vogue. The committee accordingly turned its efforts in this direction and after very careful consideration of various methods that might be employed, finally reached the conclusion that the best for universal adoption would be the Zone Rate Prorate Plan, which was



Map Showing the Zones Used in the Proposed Simplified Basis for Dividing Interline Passenger Fares

this simplification it was possible to perform the major portion of the interline work with inexperienced clerks and the plan unquestionably proved advantageous in many ways during this time when the division forces of practically all the carriers were depleted and the inter-road traffic, including a volume of military transportation orders, was exceedingly heavy. It would have been utterly impossible for carriers to have rendered their reports of interline passenger traffic in anything like the prescribed time if they had been obliged to continue to make their divisions by the application of former bases during the period of the war.

While the simplified basis that was in effect during federal control produced equitable results and accomplished the purpose intended, the plan was abolished by the railroad administration shortly before the roads were turned back as part of the program to restore conditions to their pre-war status. There is some question whether the basis could have been consistently continued under private control. However, the experience that was gained by the employment of a

submitted at the annual meeting of that association held at Atlantic City, June 8 to 10, 1921.

The success of this undertaking will depend a great deal on the interest and activity that is displayed by the carriers at large, as it naturally follows that it is only through the combined efforts of the carriers that the adoption of a uniform plan can be brought about.

## The Plan Proposed

To the layman and in fact even to the passenger accountant who is not so well versed in the interline division work, the plan might seem somewhat involved, but briefly summing up the situation it simply means this:

The plan proposes a uniform rate prorate basis for dividing interline fares such as is now in effect in certain parts of the country, except that as a means to simplicity certain zone prorating gateways are established, the setting aside of locals is ignored except when contributed from such gateways, and from points of interchange, and the prorate is

made via the route traveled instead of observing the so-called short-line principle of division.

If measured by existing methods and practices and the conclusions are to be reached by a comparison of proportions received on individual items, the foundation of the zone plan is necessarily weakened, as it must be dealt with in its entirety and receive broad and liberal consideration. Unless the carriers are willing so to consider the proposition it is rather doubtful whether any progress can be made towards simplification that would help them get away from the existing intricate and technical methods.

Test figures as published in the 37th report of the Railway Accounting Officers' Association were prepared to show that the results produced under the proposed plan compare favorably with results produced under the so-called pre-war bases, now in effect, which in themselves are not accepted by all carriers as being entirely consistent in many of their phases, and the committee suggested that the members of the association, before passing judgment on the merits of the proposed plan, make a further test by comparing the amount of revenue accruing in the aggregate on a considerable volume of their traffic under the existing bases of division with the amount that would be produced under the proposed zone rate prorate plan.

Experience has proven that inter-road passenger traffic, when dealt with collectively yields an average revenue per passenger per mile somewhat lower than what is derived from local traffic, due very largely to the fact that the longer route carriers participate in more short line interline fares than short line local fares. There are other contributing factors, but the ultimate result is substantially the same regardless of the basis of division employed just so long as this is consistent, even to the extent of applying the passengers-carried-one-mile basis which was in effect during federal control. This fact should lead the carriers to weigh the matter very carefully as to whether there is need for the high-class refinement that now takes place in the division of interline passenger revenue, requiring the services of highly trained experts who sometimes consume as much as two hours in figuring a single division, only to have one of the interested carriers, whose division man no doubt consumed as much or more time in the refiguring, come back with a claim on account of erroneous proportion, necessitating a further refiguring by the initial carrier and in all probability resulting in long drawn-out correspondence as to who is correct. Questions of this kind arise with more or less frequency but they usually concern isolated movements of traffic, the amounts of revenue involved are of no great consequence, and are exceeded many times by the cost of the labor.

After the plan was drafted the passenger committee of the Accounting Officers' Association met in conference with a sub-committee of the American Association of Passenger Traffic Officers and that committee expressed itself as being heartily in accord with the idea of devising a plan which would have the effect of simplifying the bases of division of passenger fares throughout the United States and Canada. It is also expected that the individual passenger accountants will do their utmost in securing the co-operation of their respective traffic departments on whom so much depends in bringing about the desired simplification. When conclusions are reached the members of the Accounting Officers' Association are requested to file their concurrence with the secretary or advise him of their views and any communications offering suggestions or criticisms will be handled to a conclusion by the accounting committee.

#### Present Bases Nothing More Than Tradition

To make it clearer to those who are not so well informed as to the needs for all of this it might be pointed out that the division of interline fares is acknowledged to be the most intricate part of passenger accounting work. The general

principles, bases applicable in different parts of the country, agreements, arbitrary requirements, etc., are nevertheless nothing more or less than tradition today. In New England, Trunk Line, Central, and Southeastern Passenger Association territories a mileage prorate basis of division prevails; in Western, Southwestern, and Trans-Continental Passenger Association territories a rate prorate basis is in effect. On trans-continental traffic the fares are divided by applying a rate prorate over the Missouri river with a re-division west on published percentages, derived from the rates or arbitrarily established, and the basis to be employed in the re-division east depends on the territory in which the point of origin or destination is located. In addition to this there is the re-division that is always necessary incident to the observance of the short line principle, and the analysis of the rates for the purpose of picking out small pieces of local contributed, all of which consume a great deal of time. It requires years of experience to make a competent division clerk, so there appears to be every good reason why a simplified basis of division should be adopted if it is possible to devise a plan which will be acceptable to all carriers.

It is not claimed that the proposed plan is perfect in all of its details, but it is felt that the general principles of the simplified basis as submitted will produce an equitable division of revenue for all carriers, overcome practically all of the division controversies that were heretofore met with, permit of educating clerks in this branch of the work to a high degree of proficiency in considerable less time than required under present methods, and eventually accomplish a saving of 25 per cent in clerk hire for this work.

An outline of the plan was given in the 1921 R. A. O. A. Agenda. It follows in part:

SUGGESTED UNIFORM METHOD OF DIVISION TO BE EMPLOYED IN APPORTIONMENT OF REVENUE DERIVED FROM THE SALE OF INTERLINE TICKETS AND EXCESS BAGGAGE COLLECTIONS ON PASSENGER TRAFFIC INTERCHANGED BETWEEN ALL CARRIERS IN THE UNITED STATES, CANADA AND MEXICO, EFFECTIVE WITH THE ACCOUNTS FOR THE MONTH OF.....19.....

#### ZONES

The territory in the United States, Canada and Mexico will be divided into zones to be designated Atlantic, Eastern, Central, Western, Pacific, Canada and Mexico.

#### BOUNDARIES OF ZONES

**ATLANTIC ZONE.** Territory east of a line drawn from Buffalo, N. Y., to Mobile, Ala., via Pennsylvania Railroad. Buffalo, N. Y., to Pittsburgh, Pa., Ohio River to Cincinnati, O., C. N. O. & T. P., to Chattanooga, Tenn., A. G. S. to Birmingham, L. & N. to Mobile, Ala.

**EASTERN ZONE.** Territory west of the Atlantic zone to a line drawn from Chicago, to St. Louis, Mo., via C. & E. I., thence via the Mississippi river to the Gulf of Mexico.

**CENTRAL ZONE.** Territory west of the Eastern zone to a line drawn from Duluth, Minn., to Houston, Texas, via Great Northern; Duluth, Minn., to St. Paul, Minn., C. St. P. M. & O. to Sioux City, Ia., Missouri River to Kansas City, Mo., M. K. & T., M. K. & T. of Texas to Ft. Worth, Texas, thence H. & T. C. to Houston, Texas.

**WESTERN ZONE.** Territory west of the Central zone to a line drawn from the Canadian boundary line to El Paso, Texas, via Great Northern from Sweet Grass, Mont., to Billings, Mont., Nor. Pac. to Butte, Mont., Union Pacific System to Ogden, Utah, D. & R. G. to Colorado-Utah state line, Colorado-Utah state line and A. T. & S. F. to El Paso, Texas, through Albuquerque, N. Mex., thence Rio Grande river to Gulf of Mexico.

**PACIFIC ZONE.** All territory west of the Western Zone.

**CANADA ZONE.** All territory in Canada.

**MEXICO ZONE.** All territory in Mexico.

#### PRORATING ZONE GATEWAYS

**BETWEEN ATLANTIC AND EASTERN ZONES.** Buffalo, N. Y.; Pittsburgh, Pa.; Cincinnati, Ohio; Chattanooga, Tenn.; Birmingham, Ala.; Montgomery, Ala., and Mobile, Ala.

**BETWEEN EASTERN AND CENTRAL ZONES.** Chicago, Ill.; St. Louis, Mo.; Memphis, Tenn.; Vicksburg, Miss., and New Orleans, La.

**BETWEEN CENTRAL AND WESTERN ZONES.** Duluth, Minn.; St. Paul, Minn.; Sioux City, Ia.; Omaha, Neb.; Kansas City, Mo.; Ft. Worth, Tex., and Houston, Tex.

**BETWEEN WESTERN AND PACIFIC ZONES.** Billings, Mont.; Ogden, Utah; Salt Lake City, Utah; Albuquerque, N. Mex., and El Paso, Tex.

**BETWEEN ALL UNITED STATES ZONES AND CANADA ZONES.** All points of interchange.

**BETWEEN ALL UNITED STATES ZONES AND MEXICO ZONE.** All points of interchange.

#### SECTION I. GENERAL PRINCIPLES TO BE OBSERVED

(A) Rate prorate.

(B) Locals or joint fares contributed to or from points that are not zone



prorating gateways or interchange points shall be ignored except as specifically provided for in Section 3, Paragraph A.

The fact that more than selling fare may accrue to or from a zone prorating gateway or point of interchange in the division shall also be ignored.

(C) Arbitraries on account of bridge tolls, water transfers, also omnibus and baggage transfers when incurred, shall be allowed interested carriers. (See Section 6, Paragraph A.)

#### SECTION 2. RECOGNITION OF ZONE GATEWAYS

(A) On inter-zone traffic moving via two or more zone gateways within the same zone the first zone gateway en route shall be the initial prorating gateway.

(B) On inter-zone traffic moving through three zones without passing through initial authorized zone prorating gateway, the first prorate shall be made on zone prorating gateway through which traffic moves and redivision made as though traffic had originated at or was destined to such gateway.

(C) On inter-zone traffic moving through four zones without passing through Duluth, Minn.; St. Paul, Minn.; Sioux City, Ia.; Omaha, Neb.; Kansas City, Mo.; Ft. Worth, Texas, or Houston, Texas, the initial prorating gateway shall be in Chicago, Ill.; St. Louis, Mo.; Memphis, Tenn.; Vicksburg, Miss., or New Orleans, La., according to gateway used and redivision made as though traffic originated at or was destined to these gateways. In the event traffic does not move through any of the above named zone gateways the initial prorate shall be over the first zone gateway en route and redivision made as though traffic originated at or was destined to such gateway.

#### SECTION 3. ALLOWANCE OF AMOUNTS CONTRIBUTED TO THROUGH FARES

(A) Fare made by use of current selling or basing fares to or from the actual point of interchange via route of traffic, or to or from zone prorating gateway, such current selling or basing fares shall be allowed line or lines contributing and the remainder divided on basis applicable from or to such point or points proper.

(B) When current selling or basing fares are deducted it is understood that the remainder shall be prorated regardless of whether or not it is applicable as a selling or basing fare via route traveled.

#### SECTION 4. DEFINITION OF TERM "PRORATE VIA ROUTE TRAVELED"

The term "Prorate via Route Traveled" means a prorate using current one-way selling or basing fares for each line used via route of traffic.

#### SECTION 5. FARES TO BE USED AS PRORATING FACTORS

(A) ONE WAY—Where the through short line fare applies via route of ticket the short line current selling or basing fares shall be used as prorating factors throughout. When through fare is constructed by use of fares higher than via direct route, prorating factors shall be the fares applicable via route of traffic.

(B) ROUND TRIP—Round trip fares made by use of double current one-way fares, the current one-way fares shall be used as prorating factors. Round trip fares that are made in part less than double locals to or from points of interchange shall be divided by using the same relative fares as prorating factors to or from prorating gateways as were used in construction of the through fare to be divided.

Note: Intrastate fares should be used in the division of intrastate sales and interstate fares on interstate sales.

#### SECTION 6. ARBITRAIRES

(A) Bridge tolls, water transfers and omnibus and baggage transfers heretofore considered in the division of interline fares and when incurred via route of ticket shall be allowed interested carriers and deducted as follows:

1. Intra-zone—From through fare.
2. Inter-zone—From joint proportions accruing to zone or zones in which arbitrary is incurred.

Amounts contributed on account of the same arbitraries in construction of the fares that are used as prorating factors shall be deducted from such prorating factors in establishing proportions accruing to interested carriers.

(B) Side trips and stage lines' fares—Extra charges collected for side trips and stage lines shall be allowed carriers performing the service or settling with the stage line.

#### SECTION 7. BASIS FOR DETERMINING PROPORTIONS ACCRUING TO BOAT LINES

The amounts accruing to boat lines will be determined on a prorate per rate basis using fares of like class over the port through which routed and the remainder redivided between rail lines, observing zone gateways.

#### SECTION 7-A. SPECIAL CAR AND TRAIN MOVEMENTS

Lump sum collections shall be divided using proportions accruing in division of one-way fares between points of movement.

#### SECTION 8. INTERLINE BAGGAGE CHARGES

Proportions for interested carriers shall be established by applying to the ticket proportions the per cent that the baggage rate per cwt. bears to the one-way passenger fare, extending the amounts so obtained by the excess weight of the shipment.

#### SECTION 9. GOVERNMENT NET FARES

(A) Through fares made on point of interchange or made via route of traffic shall be divided as made.

(B) Through fares for traffic moving via other than net fare making route shall be divided on basis outlined herein, using commercial fares as factors.

(C) No line or lines to receive more than net local or joint net fare received for same haul on local or joint business.

(D) In case a line or lines are restricted to net local or joint fare as provided in preceding paragraph, the remainder to be apportioned on same basis as is used in the division of same class of commercial fares, eliminating factors of the line or lines receiving net locals or joint fares.

#### SECTION 10. ESTABLISHING PROPORTIONS FOR SYSTEM LINES

Where separate proportions are required for system lines same will be established under the rate prorate basis of division as herein provided. If

such carriers prefer, arrangement may be made to have the combined proportions for the system lines reported to the initial carrier and the matter of subdividing the revenue left to the carriers directly interested.

#### SECTION 11. DIVISION OF ROUND TRIP FARES

Round trip fares to be divided as constructed as between going and return trip, recognizing such amounts as are added to the through fares for side trips, diverse or circuitous routes, etc., each part to be redivided rate prorate, using same basis as applicable for one-way sales via the direction traveled, recognizing factors as provided for in Section 5, Paragraph B. Report amounts added for side trips to line performing the service and for diverse or circuitous routes to the line or lines involved.

#### SECTION 12. INTRA-ZONE (TRAFFIC LOCAL TO ZONES)

(A) Fares made on all gateways through which traffic is routed by use of current selling or basing fares will divide as made.

(B) Fares not made on any gateway through which traffic is routed by use of current selling or basing fares shall be prorated via route traveled.

(C) Fares made by use of current selling or basing fares to or from actual point of interchange, deduct such current selling or basing fares and prorate remainder via route traveled.

(D) Where deductions of selling or basing fares are provided for it is understood that the remainder shall be prorated regardless of whether or not it is applicable as a selling or basing fare via route traveled.

(E) In the event originating point and destination are within the same zone but traffic for a portion of the journey passes through another zone, prorate on same basis as though traffic moved entirely within one zone.

NOTE: Sections 13 to 27 inclusive are devoted to specific and detail illustrations as to how the rate prorate is to be applied in the observance of gateways, re-division within zones, etc., on traffic interchanged between zones.

#### SECTION 28. TRAFFIC WITH POINT OF ORIGIN AND DESTINATION IN THE UNITED STATES BUT PASSING THROUGH CANADA

Traffic with point of origin and destination within same United States zone but passing through Canada, prorate via route traveled. (See Section 12, Par E.)

Traffic originating in one United States zone and destined to a point in another United States zone but passing through Canada.

(a) If via any United States zone gateway, prorate recognizing same zone gateways and basis as outlined herein in Sections 1 to 22 inclusive, for traffic passing through such gateways, the total amount to and from the United States zone prorating gateways which involves a joint haul between United States and Canadian lines shall be prorated via route traveled, amounts accruing within zones to be redivided via route traveled.

(b) If no United States zone gateway is involved prorate via route traveled.

#### SECTION 29. TRAFFIC WITH POINT OF ORIGIN AND DESTINATION IN CANADA BUT PASSING THROUGH THE UNITED STATES

Traffic with point of origin and destination within Canada but passing through only one United States zone, prorate via route traveled.

If traffic passes through more than one United States zone, prorate recognizing same basis and United States zone gateways passed through as for traffic originating in Canada and destined to points within United States and via such gateways, the total amount to and from the first and last United States zone prorating gateway shall be prorated via route traveled.

If no United States zone gateway is involved prorate via route traveled, amounts accruing within zones to be redivided via route traveled.

#### BETWEEN UNITED STATES AND MEXICO

#### SECTION 30. VIA AUTHORIZED POINTS OF INTERCHANGE AND NOT PASSING THROUGH ANY UNITED STATES ZONE GATEWAY

Prorate over point of interchange with Mexican line and amounts accruing within United States zone or zones to be prorated via route traveled.

#### VIA AUTHORIZED POINTS OF INTERCHANGE AND PASSING THROUGH UNITED STATES ZONE GATEWAYS

Prorate recognizing same United States zone gateways and basis as outlined herein in Sections 1 to 22 inclusive for traffic passing through such gateways, the total amount thus established to or from the first or last United States prorating gateway, as the case may be, passed through, which involves a joint haul between United States and Mexican Lines, shall be prorated via route traveled.

#### SECTION 31

Bridge arbitraries which are to be considered, as provided for herein, are as follows:

(To be inserted)

#### MAP

The accompanying map outlines zone territories and prorating zone gateways as prescribed herein.

#### INDEX

Appropriate index to be prepared.

IT IS INTERESTING to note that in many of the larger countries abroad the heavy trunk-line electrification projects in the United States have been very carefully studied and are very frequently referred to by foreign consulting engineers in their reports, and that in several instances standard American plans have been adopted practically complete by engineers advising foreign governments on steam railway electrification. It is believed that the experience of American manufacturers in developing reliable heavy railroad equipment in this country will be of considerable help in negotiating a foreign contract.—*Commerce Reports*.

## Unemployment Conference Makes Emergency Report

WASHINGTON, D. C.

THE UNEMPLOYMENT conference begun at Washington on September 26, on September 29 adopted a series of recommendations, formulated by the organization committee and based on the reports of sub-committees, constituting an emergency program for immediate adoption and prosecution. The conference then adjourned until October 10 to allow an opportunity for further work by its sub-committees; the views of the conference in amplification of the emergency recommendations and as to permanent measures which would contribute to the restoration of industry will be given following the receipt of further reports by the committees.

The only debate at the session of the full conference was on the question of the wording of a report by the committee on unemployment statistics, which had reported that the number of unemployed in the country is approximately 4,000,000. Secretary of Labor Davis objected to this because it ignored the estimate of 5,700,000 made by the Bureau of Labor Statistics, and Secretary Hoover suggested that to avoid controversy the report confine itself to stating that there were many millions of unemployed. After a discussion as to whether the wording should be "many millions," "several millions," or merely "millions," the report was adopted temporarily in a form stating that the conference finds that there are variously estimated from  $3\frac{1}{2}$  to  $5\frac{1}{2}$  millions unemployed and referred the report to the committee for further study.

The report as adopted stated that there has been an improvement, but pending general trade revival this crisis in unemployment cannot be met without definite and positive organization of the country. There was no reference in the report of emergency recommendations adopted to the railroad situation, although it had been given serious consideration both by the committee on emergency measures in transportation and the committee on emergency measures by manufacturers. It is understood that the former had prepared a report urging the importance of the passage by Congress of the bill to authorize the War Finance Corporation to purchase railroad securities held by or to be acquired by the Railroad Administration to provide cash for an early settlement with the railroads of their accounts for the period of federal control, but it was announced at the conference that the trans-

portation committee desired further time for the preparation of its report. Possibly the subject was omitted from the emergency program to avoid controversial subjects. The transportation committee, with several others, will report at the session of the conference on October 10.

The emergency recommendations adopted stated that the problem of meeting the emergency of unemployment is primarily a community program and recommendations were made for the organization of community emergency committees to carry through a community plan for meeting the unemployment emergency. Other recommendations include public construction by way of the expansion of municipal, state and federal building programs, and Congressional action to expedite roadbuilding work.

The report states that the greatest area for the immediate relief for unemployment is in the construction industry, which has been artificially restricted during and since the war. It was estimated that more than two million people might be employed if construction were resumed. It was recommended that the governors of the various states summon representative committees, with the co-operation of the mayors or otherwise, to determine facts, to organize community action and secure adjustments in cost, including removal of freight discriminations, and clean out campaigns against combinations, restrictions of effort, and unsound practices where they exist, that building may be fully resumed.

Another recommendation stated that the manufacturers can contribute to relieve the present acute unemployment situation by part time work, manufacturing for stock, taking advantage of the opportunity to do plant construction, repairs, etc. One of the important obstacles to a resumption of normal business activity will be removed, the report said, as prices reach replacement values, and all manufacturers and wholesalers who may not yet have adopted this policy were urged to do so. It was declared essential to the success of these measures that retail prices shall promptly and fairly reflect the price adjustment of the producer, manufacturer and the wholesaler.

An appeal to governors and mayors to co-operate in carrying out the recommendations made by the conference was sent out by President Harding on October 3. The President's statement said that in order that there may be unity of action by all of the forces which may be brought to bear, the unemployment conference is establishing an agency in Washington through which appropriate co-ordination can be promoted and through which reports on progress and suggestions may be given general circulation and co-operation.



Experimental Train on the Baltimore & Ohio in 1900 Designed to Reduce Atmospheric Resistance



# Manufacturers Discuss the Railroad Problem

## National Conference at Chicago Favors Repeal of Adamson Law and Abolition of Labor Board

THE RAILROAD PROBLEM and the close relation between freight rates and the high cost of labor, fuel and taxes comprised the most important subject of discussion at the National Conference of State Manufacturers' Associations which was held at the Congress Hotel, Chicago, on September 29-30. William Butterworth (Deere & Co., Moline, Ill.), president, presided at the sessions.

R. M. Barton, chairman of the Railroad Labor Board, Chicago, discussed the work of the Labor Board and the problems with which it is confronted. Clarence E. Bement, president of the Novo Engine Company, Lansing, Mich., presented a paper, "The Railroad Problem," which laid particular stress on the problems confronting the manufacturers of railway supplies because of the present freight rates. W. L. Allen, Laclede Steel Company, St. Louis, Mo., spoke on the relation of the public to the Railroad Labor Board. Samuel O. Dunn, editor of the *Railway Age*, addressed the Friday afternoon session on the problem, "How Can the Railroads Reduce Freight Rates?" Three papers, those of Samuel M. Felton, president, Chicago Great Western, Chicago; E. B. Leigh, president, Chicago Railway Equipment Company, Chicago, and A. C. Davis, Gurney Ball Bearing Company, Jamestown, N. Y., are summarized below. Mr. Davis' paper in particular was received with great enthusiasm.

The following resolution was offered by the Transportation Committee at the close of the session on Friday and adopted by the Conference:

"Resolved, That it is the sense of this meeting that the industrial, commercial and agricultural interests of this country require a decided reduction in freight rates as a necessary step towards the revival of business, and we also recognize that it is necessary in order to bring about these reductions in freight rates that the railroads be relieved of the necessity of paying a higher wage rate than prevails generally in the communities through which they pass and are paid by private corporations doing similar work. We also go on record as favoring the repeal of the Adamson law and the modification of the Transportation Act of 1920, to do away with the United States Railroad Labor Board and the power of the government to fix wages and labor conditions, such as the so-called national agreements, in connection with the railroads of the United States."

### The Principles Underlying the Present Railway Situation

By A. C. Davis

Gurney Ball Bearing Company, Jamestown, N. Y.

I am going to discuss the railway situation as an observer from two points of view, first, from experience as an engineer in railway service which began as apprentice in the machine shop; second, from the experience in following years as a manager of an independent industrial organization such as comprises the center of most of our smaller cities in this country.

The most serious menace to American business and industry is the concerted action of small but powerful groups of men who, without regard for natural economic laws, throw public welfare into the discard and proceed to exploit the people of this country for their own selfish group benefit.

It would be idle to say that this has occurred in the transportation industry alone or that this advantage has never

before been seized by any other than this labor group. The student of railway history cannot forget the financial groups' exploitation of the investing public, nor the attempt of certain shippers to stifle competition by forcing secret rebates and preferential rates from the transportation companies, contrary to the best public interest. These were the problems of the last decade and were solved or placed under regulation by the Sherman Act and the Interstate Commerce Commission.

The greatest economic problem before this country today is the regulation of the activities of the labor unions—how to control them effectively in the best interests of the nation.

There can be no question in the mind of any fair-minded student that the brotherhoods have been of great usefulness not only in assisting the families of their own members in cases of distress and the securing of new positions for their members if discharged for responsibility in accidents, but they also have in thousands of cases secured substantial justice for their men in the administration of discipline and have called attention of the railway officers to conditions jeopardizing the safety of travelers and welfare of the men.

### Labor Leaders Become Active

The labor leaders, quick to perceive the trend of public opinion and the sentiment of legislators, have found eager listeners among the younger element of railway employees and from an organization originally intended for mutual benefit insurance and for fraternal assistance in sickness and accident, the railway brotherhoods became dominated by grievance committees. The right of appeal from decisions of the division officers was established and meetings arranged with the higher executives. In many cases the matters taken up in appeal were so insignificant as to be regarded as unimportant by the general officers and frequent compromises were made and the decisions and rulings of the local division officer were reversed. This rule of expediency was sometimes adopted only after threat of strike or strike votes, but regardless of the reason why, the fact remains that these compromises weakened the authority of the local foremen and officers over their men, who now looked to their union representative to get them what they wanted.

To understand certain fundamentals of the wage situation one must know that it has always been necessary in the development and growth of this country to pay higher wages in the west than those paid to eastern labor to induce it to move out to the "wild and woolly west." For this reason the Central West gave higher rates than the New England states, the Rocky mountains higher than the Mississippi valley, and the Pacific coast highest of all. These wage rates were offset by the increased cost of living or the hardships of the new localities.

Now comes forward the grievance committee of the eastern railway groups saying that their work in running of shifting engines, for example in Boston, is just as hard work and requires just as much skill as a similar crew in Seattle or San Francisco, and after much contention and appealing and taking of secret strike ballots they succeeded in having the rates of pay in the east "equalized up" to the far western scale.

Within a short time, the western brotherhoods having data on the difference in economic conditions and rates paid to common labor, demanded an increase based upon the differences in the cost of living over the east. Then the east took up the "equalization game" again. This see-sawing of

"equalization upward" is characteristic of the period 1897 to 1914, and constitutes one of the reasons for the distortion of wage rates existing before the war, as between the railway brotherhood members and other railway employees. Wage advance upon wage advance was secured in this manner.

In the face of these rapidly increasing expenses and unbalanced conditions, the managers were confronted by the dilatory policy of the Interstate Commerce Commission, which with an ear to the ground for public opinion, heard rate case after rate case and granted appeals for delay and stays in execution of advanced rates, upon the representation of every group of interested shippers. Into this remarkable state of inaction and slow strangulation we allowed our main arteries of transportation to drift, even after two years of the World War were upon us.

Not content with the fact that they were already better paid than any class of railway workers and in some cases better than the staff officers themselves, the brotherhoods had effected a substantial alliance with the American Federation of Labor and seized upon the threatened war with Germany and the critical international situation of 1916 as their opportunity to force further wage advances. They forced the Adamson bill through an abject Congress at the behest of a political leader anxious to secure organized labor's pledge of support in the presidential campaign.

#### Labor in the Saddle

After the declaration of war in April, 1917, the railway presidents formed an operating board to co-ordinate the handling of traffic over the trunk lines, but the hampering effects of previous legislation both state and national prevented their being given a free hand, so that the administration deemed it necessary to take over the transportation systems as a war emergency measure in December, 1917. It becomes evident what was the real power behind this move when we see these very A. F. of L. leaders immediately placed in the seat of the administration's national adjustment boards clothed with the full authority of the government over all transportation systems of the country in regard to appeal from discipline, wage classifications, and rules of working. Their absurd decisions stand as a record of how not to do the job.

Having at last forced federal control and having their hands in the national treasury, the A. F. of L. and the brotherhoods proceeded to have Director-General McAdoo issue general order No. 27, establishing still further increases in wages retroactive to January 1, 1918. This was followed by Supplement No. 4, which added to it again with retroactive wage increases, making about 80 per cent increase over 1916, besides abolishing piecework in the shops and starting a "leveling downward" of shop craft efficiency. These were followed by the so-called "national agreements" in September, 1919, in which our representative, the director-general, had no hand at all, except the hand which held the pen to sign on the dotted line. They never were *agreements* at all—they were American Federation of Labor ultimatums—the price they demanded in times of our nation's emergency for continuing their plain duty or tie us up in a strike.

A further wage increase was made in 1919 which brought the total to 100 per cent increase over 1916. And as a parting gift from the new director-general in July, 1920, a still further increase retroactive to May 1 was allowed by the Railway Labor Board, just following the so-called "out-law strike," which finally brought the figures to 150 per cent increase over 1916.

It is a tempting bait to the workers—this getting a wage increase at the public expense by threat of strike. The labor leaders know that if they are to hold their jobs they must continue to get results. These jobs are getting into the desirable class of recent years. A recent press notice stated that one of the leaders was actually voted a salary of

\$100,000 per year. The total wage bill of the railways in 1916 was \$1,468,000,000—in 1920 it was \$3,698,000,000, an increase in four years of about \$2,230,000,000, and we must acknowledge that \$100,000 would be small commission to pay for such results!

#### A Real Agreement

Flatly refusing to consider the Plum Plan Government Ownership bill, Congress enacted the Esch-Cummins bill now known as the "Transportation Act," which returned the railways to their owners on March 1, 1920, under terms intended to insure substantial justice to shippers, owners and employees alike. One most important provision is the establishment of local adjustment boards and of a railway labor board of nine members, representing equally the public, the managers and the employees, clothed with authority to decide "any dispute in regard to grievances rules, or working conditions, which cannot be agreed upon in direct conference between any carrier and its employees, if the dispute is likely to interrupt commerce."

The rulings of this labor board are the important news of today. Yet it is questionable whether many of the gentlemen present can tell who are your three representatives on the board, much less have they heard with personal emphasis and explanation your views and experiences. How can you then expect them to represent you?

The program and ambitions of the A. F. of L. and the brotherhoods are pretty well understood by this time, but the failure of the Plumb Plan propaganda has not caused them to give up their plan to get hold of the transportation systems of this country in some effective way, if possible, through the rulings of the Labor Board. If they can perpetuate the union-made agreements and thus indirectly attain their end, then they believe they can force all railway employees to deal with the managers through the committees dominated by the union, and this being accomplished, why should the union leaders trouble about who owns the railways, so long as they can make the working rules and wage schedules to suit themselves. That is all they ever wanted government ownership for!

This is the crux of the question brought up by the Pennsylvania Railroad's working agreement negotiated with its own employees under Section 301 of the Transportation Act. The railway managers demand the right to deal directly with their own men regardless of membership or non-membership in any union. They insist that the men who do not desire to pay tribute in union dues be permitted to have a voice in the working agreements with their own employers as the Transportation Act contemplates they should do.

#### Some Things Are Worse Than a Strike

The railway managers have taken the firm stand that Congress did not delegate authority or jurisdiction to the Labor Board in cases of this kind in which a mutual satisfactory agreement has been reached between employer and employees and where no dispute has arisen and there is no threatened disruption of traffic.

Perhaps we are being treated to an "educational" strike ballot again. We expect it to be the usual 98 per cent announced through the press in favor of a strike. It is time for our public representatives to call this "strike bluff" and have a show-down. There are some things worse than a strike—one of them is a continuation of compromising with wrong when we know what principles are right—when we acquiesce for expediency's sake in continuing an unjust system.

We are not among those who would criticise the Labor Board or the provisions of the Transportation Act until it has been fairly tried out, but we cannot believe that Congress in the Transportation Act intended that the Labor Board should assume the functions of railway managers.



The transportation companies and their employees must be subject to federal supervision, but there should be closed co-ordination between the Labor Board and the Interstate Commerce Commission.

A plan of working rules and wage rates must necessarily vary to meet local conditions and must be readjusted from time to time to meet the changes of economic conditions. If the Labor Board will adopt the rule so fundamental in the government of our states—"the maximum of power to local authority, the minimum of federal supervision"—then we have some chance of making the Transportation Act a working success. In conclusion we can doubtless agree on some important principles: (1) That the ordinary economic laws which govern all business should apply without artificial restraint of law to the conduct of the railway's business. (2) That the operation of the railways should be in the hands of the trained body of responsible managers to whom shall be delegated sufficient authority to maintain discipline and efficiency of operation. (3) That direct working and wage agreements be established between the railway managers and their own employees, free from outside dictation. And finally, that we will never tolerate the seizure of our transportation systems for the benefit of any group of men, be they shippers, financiers or employees.

## Railway Operating Costs and Railway Rates

By Samuel M. Felton

President, the Chicago, Great Western

At almost every meeting of bodies of business men nowadays the railway situation is a subject of discussion. One feature of the railway situation which is discussed on almost every such occasion is that of freight rates. There is pretty general agreement that many of the present freight rates should be adjusted downward.

The Interstate Commerce Commission had the support and approval of most of the business interests of the country in fixing the present rates. Without most people realizing it, however, there had begun shortly before these rates were fixed a general decline of business and of prices, which continued with accelerating rapidity for some months. The result is that the rates do not bear anything like the same relationship to the prices of most commodities that they did when they were fixed.

The declines in prices which have occurred in most industries have been accompanied by reductions of most costs of production and operation. There is a natural sentiment that all the costs of production and operation of our various industries should be correspondingly reduced. Freight rates enter more or less into the costs of all industries. There have been numerous readjustments of freight rates, most of them downward, since the present rates were fixed, but there has been no general reduction. It is but natural that business men and farmers should believe that some substantial reductions in rates should under existing conditions be made, and should ask why they have not been made.

One of the subjects to be considered at your conference is that of railway operating costs and rates. The present rates were fixed solely because of enormous increases in railway operating costs. The only way conditions can be produced which will make it practicable to substantially reduce the present rates in fairness to all concerned is by reducing the present operating costs.

The managements of the railways have made enormous retrenchments within the last year. For example, in July, 1920, the operating expenses of the Class I roads were \$514,254,000, while in July, 1921, they were only \$362,800,000, a reduction of 29 per cent. A very large part of this reduction in expenses was made both possible and necessary by the heavy decline in the amount of traffic that had to be handled, and another large part consisted of deferred

maintenance. The total expenditures of the railways for the maintenance of their properties in July, 1920, were almost \$240,000,000, while in July, 1921, they were only \$160,000,000, a reduction of 33 per cent. This large reduction in maintenance was made at the cost of the physical properties. On August 15 the railways had 382,440 freight cars in bad order. This is but one of the effects of the drastic but necessary policy of retrenchment which has been followed.

In spite of all the retrenchments made the railways in the first 12 months the present rates were in effect earned a net operating income of only about \$500,000,000. Considering them as a whole, this was but little more than the amount required to pay the interest on their bonds. The rigorous retrenchment policy which has been followed to save the companies from general bankruptcy could not be long continued without an impairment of the condition of the physical properties which would render them unfit to give anything approaching satisfactory service to the public. The only real remedy for the present situation is a reduction of their unit costs which will enable the railways to make reductions in their operating expenses which will be real and permanent, and which will help them to rehabilitate their properties instead of causing them further to deteriorate.

The principal unit costs of the railways are of three kinds—cost of materials and supplies, cost of fuel, and cost of labor. There already have been considerable reductions in the costs of materials and supplies, but the costs of fuel and labor constitute about 80 per cent of operating expenses, and there have as yet been no substantial reductions of these items.

In the year 1916 the total fuel bill of the railways was \$250,000,000, and the average price they paid for coal was \$1.76 per ton. In 1920 their total fuel bill was \$673,000,000, and the average price they paid for coal was \$4.20 per ton. In the first six months of the present year the average cost of coal to the railways was \$4.43, and while it has been coming down, in June—the last month for which we have official statistics—it was still \$4.07 a ton. The railways normally consume about 150,000,000 tons of coal in a year. At the average price they were paying at the time of the last reports this much coal would cost them about \$350,000,000 more than at the average price of 1916.

The largest item of railway expenses is the cost of labor. The total wages paid in 1916 were \$1,470,000,000. In 1920, after the wage advance granted by the Labor Board, and while the railways were still handling a large traffic, the wages paid were running at the rate of \$3,900,000,000 a year, or about \$2,400,000,000 more than in 1916. This enormous increase in wages was due, first, to changes in rules and working conditions made under government control, which necessitated the employment of a largely increased number of men; and, secondly, to large advances in basic wages.

The railways made great efforts to secure abrogation of the national agreements through which the revolutionary changes in the rules and working conditions of employees were made. The Railroad Labor Board at one time ordered abrogation of the national agreements and remanded the making of new rules and working conditions to negotiation between the individual railways and their employees. These negotiations in most cases proved futile because the labor unions insisted on acceptance by the individual railways of exactly the same rules and working conditions which were incorporated in the national agreements. The Labor Board then rescinded its order for the abrogation of the national agreements, and they are still in effect except for certain changes in the rules regarding overtime. The labor unions thus far have not accepted even the overtime rules adopted by the Labor Board.

Because of the heavy decline in traffic and the drastic

retrenchment policy adopted by the railways there has been a large reduction in the number of employees. As long, however, as the present rules and working conditions remain in effect the reduction in employees must be regarded as, in the main, only temporary. Sooner or later the railways will again be called upon to handle a large traffic and to do a normal amount of maintenance work. Unless reasonable changes can be secured in the rules and working conditions they will again necessitate the employment of an excessive number of men, as was the case last year, and a corresponding increase in expenditures for labor.

The railways also asked the Railroad Labor Board to wipe out the advance in wages granted by it on July 20, 1920, which averaged 22 per cent. The board granted a reduction of wages which it estimated averaged only about 12½ per cent. About 90 per cent of railway employees are paid by the hour, and this award by the Labor Board leaves the average wage per hour of railway employees about 124 per cent higher than it was in 1916. If the railways were now employing as many men as last year, the wages being paid would be about \$2,000,000,000 a year more than in 1916.

Another large increase in outgo to which the railways have been subjected is in taxes. Their taxes in 1916 were \$157,000,000. They are now running at the rate of almost \$300,000,000 a year, or almost twice as much as five years ago.

The following is then, in brief, the situation with which the railways now find themselves confronted. Their average passenger rate is about 53 per cent more than in 1916, and their average freight rate about 74 per cent more. On the other hand, the prices of materials and supplies average about 65 per cent more than in 1916, the average hourly wage of labor is 124 per cent more, the average price of coal over 130 per cent more, and taxes almost 100 per cent more. Thus far this year, with a somewhat smaller traffic than in 1916, their total earnings have been about 60 per cent more than in the same months of 1916, and their operating expenses, in spite of all the retrenchments that have been made, have been about 110 per cent more. These figures afford a full explanation of the fact that in 1916 they earned a net operating income of 6 per cent, while thus far this year they have earned at the rate of only about 2¼ per cent.

It is undoubtedly true that the rates of our railways must be readjusted, and in many cases reduced, if they are to be made fair to the business interests of the country and such as to contribute to a revival of prosperity, but we must not forget that the high rates of the railways are not holding back a revival of business generally. There is no doubt, however, that the present operating costs of our railroads are so high that we cannot make a substantial reduction in rates until we get those costs down where they will not unduly reduce net earnings and imperil the railways, financially, and render them unable to provide the facilities and service that the welfare of the country requires.

How, then, are reasonable reductions in the operating costs to be secured? The railway managers are doing, and will do, all they can to increase the efficiency and economy of operation. The solution of the problem of reasonably and permanently reducing railway operating costs is, however, mainly in the hands of the public and of public authorities. The main cause of the present high prices of coal are the wages for miners fixed by a government commission, and the prices the railways must pay for coal will remain excessive until these wages have been reduced. The taxes the railways must pay are entirely in the hands of government authorities. The present rules and working conditions and wages of railway employees are entirely due to the action of government authorities. They were made entirely by the Railroad Administration and the Railroad Labor Board.

One-third of the members of the Labor Board are appointed to represent the public. They hold the balance of power on the board, and therefore whether reasonable rules and working conditions and reasonable wages shall be made, and the payroll correspondingly reduced, depends upon the attitude of these public members. To them, therefore, the public may, and in fairness, must look, for most of the reductions in railway expenses which are prerequisite to any reasonable reduction of rates.

The railways are in a situation unlike that of almost any other large industry in the country. The farmer and the manufacturer enjoy a degree of freedom in the conduct of their businesses that the railway manager does not possess. You manage your business without much government interference. On the other hand, while the railways are privately owned and managed, they are subjected to various kinds of government regulation, and their situation as a whole is determined by the way in which they are regulated. The railway managers will do their part in improving the railway situation with respect to operation and rates, but they cannot effect the improvements which ought to be made unless the public does its part by regulating the railways intelligently, wisely and fairly. Those attending this meeting are a part of the general public. Therefore my suggestion to you and all other business men is that while you do demand, and should demand, that the managers of the railways spare no effort to improve the present situation, you should on your own part spare no effort to bring about regulation of the railways which will make it possible for the managers to operate the properties with the efficiency and economy, and provide the service and make rates, that the business interests and, indeed, all the people of the country so greatly need.

### What Will Effectively Restore Business?

By E. B. Leigh

President Chicago Railway Equipment Company

In lieu of an address I ask leave to present a letter mailed to Herbert Hoover, Secretary of Commerce, in his capacity as chairman of the Unemployment Conference now in session at Washington:

Restoration of national prosperity can be started on its way by just one factor—purchasing power. All substitutes are bootstraps or phantoms.

Among the sources of purchasing power the largest and most definitely available is the power of the railroads to buy material and labor for maintenance, additions and betterments. In normal years the railways directly or indirectly have consumed from 40 to 50 per cent of the iron and steel production, admittedly the "barometer of business." It is the history of depressions that recovery is always accompanied by resumption of large railroad buying, and never comes without it—the only exception being the war period. The business so initiated flushes the channels of all industry and trade, including agriculture, and favorably affects every inhabitant of every community.

At present the railroads lack the money and the credit to finance proper maintenance, not to say additions and improvements. Their net income is neither sufficient nor certain. It is insufficient because railway labor is too high. It is uncertain because special groups of shippers are exerting pressure upon the roads and upon the Interstate Commerce Commission for privileged concessions which, if made general without wage reduction, would dissipate all hope of net income either adequate or stable.

In my judgment the Unemployment Conference could devise no remedy for current depression more effective than to persuade every shipper who favors lower freight rates to:

1. Participate in an organized effort to convince the Rail-



road Labor Board that railway labor cost must be immediately and substantially reduced.

2. Refrain from enlistment of executive and legislative officers of the government for exertion of pressure upon the railroads or upon the commission in connection with rates; and to employ exclusively in the discussion of proposed rate revisions negotiation with the carriers or, failing agreement with them, orderly procedure by testimony and argument before the Interstate Commerce Commission.

Purposely the so-called railroad refunding bill is not bracketed with the factors next above specified. The reason for so treating it is that its great importance would be in direct relief to the railway supply industry, and in what I shall say I am discussing not the special needs of that industry but the needs of the whole nation. Somewhere near \$500,000,000 may be made available for settlement of balances due the railroads by the government on current account if the sum due the government by the railroads on capital account can be funded. Somewhere between \$200,000,000 and \$300,000,000 may be due supply concerns from the railroads—remittances awaiting settlement of government balances. Therefore probably not much in excess of \$300,000,000 would remain for new orders, which at best would be temporary and not large compared with amount permanently involved in the rate and wage problem. Not even the whole of this sum will be paid over immediately. Settlements are the result of negotiation, and take time. The director general has predicted that the last will be completed by the end of 1922.

In discussing this topic I have exchanged ideas with many persons, and among those who have given it sustained thought there seem to be two classes. The first class are persuaded that in the upward climb from a depression the first stage is resumption of merchandise movement in such

necessary for all concerned to harmonize exactly their views as to the stage of recovery, if any, which business has reached. We ought to be unanimous in this—that if merchandise buying is now on the upward trend, large railroad buying will help mightily to give it permanence. The novel aspect in the present situation is this—that whereas during about 20 years past recoveries have found the railways able to come into the market with some vigor, though steadily less in each recurring instance, the present occasion finds them almost utterly without the means to resume purchasing. Never in the history of our railways has their physical condition been at a lower ebb, or their need of rehabilitation greater. It is respectfully suggested that the Unemployment Conference picture railroad buying and the requisites for its resumption to the public in such colors as will evoke an irresistible movement for railroad wage reduction and, that accomplished, and railway operating cost brought down, for reconsideration of railway rates by the Interstate Commerce Commission in orderly procedure as befits a quasi-judicial arm of the government charged by Congress with the responsibility of sanctioning tariffs under which the traffic can move and the railroads can grow.

## Freight Car Loading

WASHINGTON, D. C.

**F**REIGHT CAR LOADING showed another considerable increase during the week ended on September 24. According to the weekly report of the Car Service Division of the American Railway Association, the number of cars loaded with revenue freight was 873,305, an increase of 19,543 over the previous week, and the largest loading for any week since November 20, 1920. This was, however,

### REVENUE FREIGHT LOADED AND RECEIVED FROM CONNECTIONS

SUMMARY—ALL DISTRICTS, COMPARISON OF TOTALS THIS YEAR, LAST YEAR, TWO YEARS AGO. FOR WEEK ENDED SATURDAY, SEPTEMBER 24, 1921

Districts	Year	Grain and grain products	Live stock	Coal	Coke	Forest products	Ore	Merchandise L.C.L.	Miscellaneous	Total revenue freight loaded		Received from connections	
										This year 1921	Corresponding year 1920	This year 1921	Corresponding year 1920
Eastern	1921	8,549	3,262	44,734	1,353	4,645	2,256	63,210	84,849	212,858	249,605	218,693	269,573
	1920	6,703	2,747	58,915	3,801	7,935	11,929	49,543	108,032	169,850	213,151	112,194	259,541
Allegheny	1921	3,443	3,262	47,116	2,248	2,760	6,242	46,810	57,969	169,850	213,151	112,194	259,541
	1920	2,744	3,246	63,750	7,489	3,665	15,992	40,745	75,520	169,850	213,151	112,194	259,541
Pocahontas	1921	287	447	20,687	170	1,333	171	5,647	4,080	32,822	39,073	13,938	18,944
	1920	163	417	25,313	1,010	1,831	245	5,467	4,627	32,822	39,073	13,938	18,944
Southern	1921	3,615	2,225	22,417	321	15,109	352	39,570	39,634	123,243	130,470	69,023	75,500
	1920	3,299	2,329	25,246	1,282	19,742	2,966	34,266	41,340	123,243	130,470	69,023	75,500
Northwestern	1921	14,839	8,583	10,448	552	11,603	19,764	28,678	36,094	130,561	168,073	50,332	61,960
	1920	15,153	8,444	11,776	1,556	14,849	47,600	28,868	39,827	130,561	168,073	50,332	61,960
Central Western	1921	16,069	12,141	21,381	182	6,590	713	32,504	47,090	136,570	140,451	56,410	66,029
	1920	12,323	13,327	24,386	372	7,377	3,566	33,035	46,065	136,570	140,451	56,410	66,029
Southwestern	1921	5,046	3,013	4,691	120	6,662	835	15,893	31,041	67,301	67,286	49,036	51,618
	1920	4,384	2,914	6,047	138	8,126	761	17,682	27,234	67,301	67,286	49,036	51,618
Total all roads	1921	51,848	32,933	171,474	4,946	48,702	30,333	232,312	300,757	873,305	1,008,109	569,626	693,881
	1920	44,769	33,424	215,433	15,648	63,525	83,059	209,606	342,645	1,008,109	1,008,109	569,626	693,881
Increase compared	1920	7,079	.....	56,041	9,688	15,177	22,274	122,706	158,152	864,804	995,901	300,000	234,440
Decrease compared	1920	.....	491	43,959	10,702	14,823	52,726	.....	41,888	134,804	.....	124,255	.....
Increase compared	1919	6,708	.....	56,041	9,688	15,177	22,274	122,706	158,152	864,804	995,901	300,000	234,440
Decrease compared	1919	.....	2,622	47,272	4,682	16,658	39,520	.....	99,598	122,596	.....	114,740	.....

commodities as textiles, boots and shoes, and other necessities of the individual consumer, and that the consequent improvement in railroad earnings is reflected in railroad purchases, which broaden and accelerate commercial and industrial resurrection. The other class, to which I belong, hold that as a matter of history it is railroad buying which itself initiates the whole movement, and that any recovery in general business before the roads come into the market is negligible. There is no present occasion for arguing which of the two classes is correct on the point where they differ, because the important point is that on which they agree; namely, that however it starts, a resumption of general business is strengthened and hastened by railroad buying and cannot be permanent without it.

Applying this doctrine to the present juncture, it is un-

134,804 cars below the total for the corresponding week of 1920 when the loading was 1,008,109. For the corresponding week of 1919 it was 995,901.

Increases as compared with the previous week were reported in the loading of all classes of commodities except grain and grain products and the total for those showed increases as compared with the corresponding weeks of 1920 and 1919. The largest gain over the previous week was in merchandise and miscellaneous freight, which totaled 533,069 cars, or 10,635 more than for the previous week. Coal loading amounted to 171,474 cars, an increase of over 5,000 in a week. Livestock loading was 32,933 cars, a gain of 2,534, and forest products totaled 48,702 cars, or 2,230 cars more than the week before. The loading of grain and grain products amounted to 51,848, or 3,483 cars less than the week

before. A decline is to be expected, in view of the fact that this year's crop has largely been moved. The loading of ore was 30,333 cars, an increase of 2,118. Increases as compared with the week before were reported in all districts, but all were below the figures for the corresponding week last year except the Southwestern.

A further reduction in the number of surplus freight cars is also shown by the report for the period ending September 23. The average was 201,153, of which 55,849 were box cars and 110,376 were coal cars. This was a reduction of 6,253 in the number of surplus box cars and of 8,138 in the number of surplus coal cars.

Heavier loading of refrigerator cars in order to prevent a car shortage and enable the railroads to move during the next three months the big increase in perishable freight was urged in a statement issued by the Car Service Division of the American Railway Association.

For the 12 months ended on June 30, 1921, the railroads moved 848,425 cars of citrus and other fresh fruits and vegetables, packing house products, eggs, butter and cheese. Each car carried an average load of 14.4 tons while the average maximum load was 15.7 tons per car. The average capacity of refrigerator cars is 32.1 tons. Had the cars been loaded to the average maximum amount, 15.7 tons, 74,300 refrigerator cars would have been made available for the transportation of other freight during the year or 336 cars daily. In view of the increased amount of perishable freight now anticipated to be shipped this fall it is estimated that approximately 44,450 refrigerator cars can be made available for other uses if shippers will load their cars to the average maximum amount. This means that if this heavier loading is obtained to the extent specified—an average of 15.7 tons per car—it will be possible for the railroads to provide transportation for 700,000 tons of perishable freight during the next three months that probably cannot otherwise be moved by the railways.

## Annual Convention of the National Safety Council

By William S. Wollner

THE TENTH ANNUAL CONVENTION of the National Safety Council, held at Boston, on September 27, 28 and 29, was reported in part in last week's issue. The second day of the convention was devoted to discussion of the causes of train accidents in 1920, based on the totals shown in the Interstate Commerce Commission's accident bulletin No. 74; and the nomination and election of officers.

A paper on "Negligence of Employees" was read by F. W. Mitchell (N. Y., N. H. & H.), and was spiritedly discussed. There was an increase of 10,717 train accidents during 1920 as compared with 1919, with an increase of over \$11,000,000 in expense of operation due to this cause. The number of casualties to persons did not, however, increase proportionately with the number of accidents. "Failure to control or secure hand brakes" was the most prolific single cause of train accidents, having totaled 1,122, or 15.7 per cent. Mr. Mitchell said that in his opinion "Safety First" must be more than a slogan if the number of train accidents is to be reduced. Safety must be a controlling instinct, that will mingle in proper proportion the impulses from which action springs.

S. G. Watkins (B. & M.), spoke on "Train Accidents Due to Defects or Failure of Equipment" and T. Q. McCampbell (C. C. C. & St. L.), spoke on those resulting from improper maintenance of way and structures.

As a result of the annual election, Isaiah Hale of the Santa Fe was elected chairman and Arthur Ridgeway (D. & R. G.

W.), vice-chairman; and A. W. Rohweder (D. M. & N.), was re-elected secretary; all without opposition.

A joint meeting of the Steam and the Electric Railway sections was held on the morning of the third day, the topic of discussion being "Highway Grade Crossing Accidents," John T. Broderick (B. & O.) presiding. The topic was discussed from many angles and members brought out much data to be used in the national campaign to be conducted by the Safety Section of the A. R. A.

I. C. C. Bulletin No. 74 was further discussed at this session and during the afternoon, train service and non-train accidents being given particular attention.

At the afternoon session, D. L. Cease, editor of the Railway Trainman, spoke on "What Is On My Mind," and was responded to by L. F. Shedd of the Rock Island. Mr. Cease had circularized men on various important roads and had found that many were suspicious of Safety-First campaigns. Most of them believed that the roads were only willing to carry out this principle when the cost was not great. A majority of those who responded to Mr. Cease's circular agreed that the men were in part to blame for the apparent failure of the safety department to properly function, as they had failed to show the proper interest in its activities.

A unanimity in agreeing that "safety work has suffered since the end of federal control" gave Mr. Cease the impression that the writers of the letters were trying to draw a contrast between organized safety effort under the government and what has been done since. Mr. Cease's paper gave interesting data from his experience in dealing with life and accident insurance of trainmen. Railroad employees have for years been incredulous when told that the railroad companies had no selfish or wrong motives in establishing safety-first committees. He thinks that the men found justification in their critical attitude, in the publications of the railroads telling the employees and the public of the benevolent motives behind their safety-first operations, while at the same time yardmasters and foremen were allowed to hurry the men in their work so that they did not feel warranted in taking precautions when, to do so, would use up time. Moreover, the ambitious and energetic trainman or yardman, however desirous he may be of following safety rules, finds his ambition to make a good record the stronger motive; in other words, he takes risks because he thinks it necessary to do so in order to maintain his standing with his fellow employees. Many men still stick to the old opinion that the only way to "railroad" is to continue the old habit of taking risks when to do so will save them a little time. It is the task of the safety department to root out this manner of feeling.

### Need of Standardizing Highway Crossing Signs

This was the main topic of an interesting paper scheduled for one of the meetings of the Electric Railway Section. It was by R. S. Messenger, claim agent of the Rochester & Syracuse (electric) Railroad. He called attention to the fact that the usual warning sign (a disk 24 in. in diameter), set 300 ft. or more back from the railroad, is too small; a larger one would be more effective. Other signs, confusing to motorists, ought to be forbidden. Mr. Messenger would have a sign at least 4 ft. square and the color would be orange, which has been found to be more conspicuous than red or white. He would prohibit all other signs on the highway within 1,500 ft. of grade crossings. On his road there has been considerable difficulty in improving the view at crossings (both from the cars and from the highway) because many landowners object to having trees and shrubbery trimmed. Their primary motive is to have a hedge to cut off the view of the railroad from their dwellings. Drivers of automobiles should always go over railroad crossings in intermediate gear so as to guard against failure of their engines while on the crossing.



## Charles C. McChord

COMMISSIONER CHARLES CALDWELL MCCORD was unanimously elected chairman of the Interstate Commerce Commission on October 3, succeeding Edgar E. Clark, who recently resigned as a member of the commission to engage in private practice. He has been serving as acting chairman. The commission's announcement said the election was pursuant to the policy adopted January 13, 1911, for rotating the office of chairman annually in the order of seniority of the members of the commission. His term was made to run until December 31, 1922, to make the term of chairman coterminous with the calendar year. For many years it was the practice of the commission to elect its chairman in March each year. Commissioner McChord was appointed a member of the commission by President Taft in December, 1910, at the same time that B. H. Meyer was appointed. He served as chairman for the year beginning in March, 1915, whereas Commissioner Meyer was chairman for the year 1916. Chairman Clark was elected in March, 1920, for the year ending June 30, 1921, but when that term expired he was re-elected, upon the motion of Commissioner McChord.

The plan of electing the chairman each year in rotation was adopted by the commission after the resignation of Martin A. Knapp, who had served as chairman for several years, had raised a question as to whether any of the commissioners should be made permanent chairman. At that time President Taft suggested the selection of Mr. Clark, but Commissioner Clements was elected as the senior member and the rotation rule has since been followed. Last year Commissioners Woolley and Eastman were elected successively and declined to accept the office. Formerly the chairmanship of the commission involved comparatively little responsibility not shared by other members of the commission. The chairman presided over the commission's conferences and at hearings and acted as spokesman for the commission in a public way. As the commission's organization has increased and as its administrative functions have been developed the office of chairman has become of greater importance and has assumed more of an executive character, although in arriving at decisions the chairman's vote counts for no more than that of any commissioner.

Under the plan of reorganization of the commission authorized by the law of April 9, 1917, under which many of its functions are assigned to divisions, Commissioner McChord has been a member of Division 1, which is charged with the conduct of the bureau of valuation, and generally with the conduct and determination of matters arising under the valuation act, also matters arising under the safety appliance acts, the accident report act, the hours of service act, the ashpan act, the block-signal resolution and the section of the act which has to do with the requirement for the installation

of automatic train stops and train control or other safety devices.

Mr. McChord had had experience in railroad regulation as a member of the Kentucky Railroad Commission for several years before becoming a member of the Interstate Commerce Commission and he also interested himself in railroad regulation matters while a member of the Kentucky legislature, but, although a lawyer, while a member of the Interstate Commerce Commission his particular work has to a large extent been identified with matters pertaining to railroad operation. He had charge of the long investigation of car service matters made by the commission in 1916. In his long experience on the commission, however, he has naturally had an active part in its work of all kinds and has written many of its important decisions. He has also been a frequent dissenter and often while agreeing with a majority decision in the main, writes a separate opinion to express his individual views wherein they differ from those of the majority. He was one of the two

commissioners who were in the minority in the 1914 eastern rate advance case as originally decided by the commission, when he and Commissioner Daniels expressed the opinion that the railroads should have been granted the increase in rates asked for. The majority of the commission finally came around to this view upon a rehearing of the case. When the commission decided the general rate case in 1920, Ex Parte 74, Commissioner McChord wrote a separate opinion as a reply to the objections made in separate opinions by Commissioners Woolley and Eastman. He took the position that the commission had attempted to deal with this case under the law in a broad, comprehensive, common-sense way, realizing that the primary responsibility for the future of the railroads rested upon its shoulders. Had the decision been left to his individual judgment, he said, he would have arrived at the same general conclusion but

perhaps by a somewhat different route, because there was no difference of opinion as to the necessity for increased revenues for the carriers. He also wrote a strong opinion in the Illinois intrastate passenger fare case last November, expressing the attitude of the commission, that the commission's power to remedy state discrimination against interstate commerce had been broadened by the transportation act. He also wrote the commission's opinion in the long contested railway mail pay case, issued in 1920, in which the commission ordered large increases in the rates for the transportation of the mails and provided for retroactive payments to the carriers by the Post Office Department for the period during which the case had been pending.

Mr. McChord was born December 3, 1859, at Springfield, Ky. He was educated at Center College at Danville, Ky. After leaving college he became a member of the bar of Kentucky and engaged in the general practice of law. He was prosecuting attorney at Springfield from 1886 to 1892. He was appointed a member of the Kentucky Railroad Commis-



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Hon. C. C. McChord

sion in May, 1892, and elected chairman. He resigned in 1895 and was elected a member of the Kentucky state senate, serving four years. During this time he was the author of the bill which became popularly known as the McCord railroad law, empowering the railroad commission to prescribe freight and passenger rates for railroads in Kentucky. He was again elected a member of the railroad commission in 1899 and was again made chairman. He was re-elected commissioner and chairman in 1903 and in December, 1910, was appointed member of the Interstate Commerce Commission. He was re-appointed by President Wilson for the term expiring at the end of 1922.

## The Train Service Board of Adjustment

**T**HE TRAIN SERVICE Board of Adjustment, the board which will adjudicate points of difference between train and engine service employees and the managements of the New York Central and the Baltimore & Ohio (*Railway Age*, September 24, page 592) will be composed of eight members, four to be selected by the railroads and one by the chief executive officer of each of the four unions signatory to the agreement. These organizations are the Order of Railway Conductors, the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen and the Brotherhood of Railroad Trainmen.

The agreement provides that when disputes arise from personal grievances or from the interpretation of schedules, the settlement of which by the usual method of direct conference has failed, they shall be passed upon by the Train Service Board. The decisions of this board will be final and binding on both the management of the roads and the train service employees. It will not come within the province of the board, however, to hear any disputes arising from proposed changes in rules, working conditions or rates of pay, since such matters are to be left to the Railroad Labor Board. Disputes arising prior to the termination of federal control likewise may not be considered by the board.

As soon as all the members of the board have been appointed, they will meet in New York and select from their number a chairman and a vice-chairman, who will not thereby lose their vote on questions before the board. Thereafter the board will meet regularly at stated times each month and will continue in session until all matters before it are considered. The meeting place will be New York unless otherwise agreed upon, but the board will have authority to empower two or more of its members to conduct hearings and pass upon disputes at any place the board may designate. Such a sub-division, however, may not make a final decision—the board as a whole alone has that right.

When a disagreement arises between a train or engine service employee and the management, it will be handled in the usual manner as at present, by the general-committee of employees and the various officers of the roads. If, however, after the matter has been taken to the chief operating officer of the road (or some one designated by him) and no agreement has been reached, then the employees may refer the matter to the chief executive of their organization and if he approves the contention of the committee, he and the chief operating officer of the road will refer the matter with all supporting papers to the Train Service Board. If either the chief executive of the employees' organization or the chief operating officer of the railroad declines to join with the other in submitting a dispute, then either may refer the matter to the board under such regulations as it may make to govern such a contingency.

One hundred or more unorganized employees (who are engineers, conductors, firemen or trainmen) who are directly interested in a dispute may place it before the board by a

petition. No interpretation of an existing rule, agreement or practice which has been agreed to or accepted by the management of the railroads and the authorized employees' committees can be considered by the board as a dispute.

The board is authorized to act only in matters duly submitted to it as described above. In hearings before the board the railroads and employees will designate their own spokesmen.

The railroads and the employees will pay the compensation of their representatives on the board and the general expenses of the board will be borne one-half by the carriers and one-half by the employees' organizations. The board may require evidence in addition to that submitted when a dispute is referred to it. A majority vote of the full membership is required for a decision, which will be binding. If a majority cannot be obtained, the board will, on the request of either party to the dispute, submit the matter to the Railroad Labor Board.

Complete copies of all matters submitted and decisions made will be kept by the board and copies of decisions will be furnished to the representative of the railroads involved in the dispute, to the representative of each class of employees covered in the agreement and to the Bureau of Information of Eastern Railways.

The board will have no jurisdiction over discipline administered in the case of personal grievances. Its province in such cases will be solely the determination of innocence or guilt.

The agreement affecting the organization of the board will be effective for one year from the date of the organization of the board and thereafter for periods of one year. Any party may withdraw at the end of any year upon a 90-day notice.

AN AMENDMENT to the pending tax revision bill in the Senate has been offered by Senator McNary to repeal on January 1 all taxes on the transportation of freight, passengers and express.



From the Birmingham Age-Herald

If There Is a Walkout It Will Be an Accident



# Public Relations Work on Illinois Central

## Unusual Campaign Carried on by President Markham to Enlighten Public Regarding Railway Matters and Some of Its Results

ONE OF THE TRADITIONS which has come down from the early history of the railway service is the idea that railway executives should hold themselves aloof from the public, responding, to be sure, to demands from the public for information about the transportation industry, but making no initial effort to give such information or to build up a public understanding of railway affairs. Railway executives should not have all the blame, if the policy is to be criticised. When the railroads were growing out of their swaddling clothes a worshipful public invested with an air of mystery the men whose genius conceived and built and operated them, and the barrier thus erected from the outside came to represent a more or less well defined policy. The executive who violated it was not approved by his fellows for so doing. But, regardless of where the idea originated, it is true that only within recent years has there been any real attempt to find a policy to substitute for it.

Railway transportation has undergone a radical transformation in the course of the last generation. Private operation of the railroads has given way to a system whereby the real rulers of the agencies of transportation are not the titular heads of the industry, but the mass of the people, whose wishes are reflected in the proceedings of legislatures and governmental regulating bodies. New problems have made new policies necessary.

A method of dealing with the public on the Illinois Central system during the last year may be expected to play a part in the development of transportation policies in the future. The Illinois Central's attitude is summed up in a statement recently made by President Charles H. Markham:

"We are the trustees of a vast investment. We realize that railway property will be dealt with accordingly as public sentiment develops and crystallizes. We feel, therefore, that we must present our case before the court of public opinion, and we are glad to do that, having an abiding faith in the fairness and justice of the people when they have the facts before them."

For more than a year the Illinois Central has been endeavoring to strengthen the spirit of confidence and support on the part of its patrons for the management by laying its problems before the public and inviting constructive criticism and suggestions. Public statements discussing current phases of railway problems in non-technical language have been published in a uniform style as advertisements in about 500 newspapers in the cities and towns on the Illinois Central lines, and this has formed the basis of the public relations effort.

The program began September 1, 1920. A few days prior to that the management made public a statement to the patrons of the system acknowledging that the road had not been able to serve them as satisfactorily as was desired, but asking that they realize the problems which it faced and be patient until such time as equipment and facilities could be built up to the point where adequate service would be possible. Patrons were urged to take up directly with the management any constructive criticism of the service which they had in mind and to make suggestions for the improvement of service. They were also asked to let the management know of any phase of service which was being rendered to their complete satisfaction.

It was something new for a railway president to make a public statement to the effect that the system of which he was the head had failed to give adequate service. Patrons

liked the frank tone and they did not hesitate to express their approval. The double invitation which was given in the letter brought forth thousands of replies, some critical, but the majority commendatory.

### Advertisements Bring Public Response

The public statements forming the basis of the public relations work have appeared in the newspapers the first of each month. They have departed from the usual style of advertising designed to sell goods or service, and have been more in the nature of editorials discussing railway affairs. Each statement has been published over President Markham's name.

"It didn't take us long to discover that these statements were being watched for eagerly, not only by the people who would ordinarily read what a railway executive says, but by every class of men and women," Mr. Markham said. "Each statement was concluded with an invitation to patrons to submit constructive criticism and suggestions, and this invitation has led to a correspondence which has brought the personality of the Illinois Central into the homes and business places of many thousands of people who depend upon the railway system for freight and passenger service."

Every suggestion brought forth by the public relations work addressed to Mr. Markham has been given careful attention by him and promptly replied to, and he believes the value of the personal touch of this correspondence cannot be over-estimated.

That a busy railway president feels the importance of considering the wishes of the least of his patrons cannot fail to make an impression. The correspondence also opened up a channel through which he might obtain, in a way otherwise impossible, a bird's-eye view of the reaction of patrons to the service rendered by employees.

"This also deeply impressed our officers and employees," Mr. Markham continued. "It meant that complaints about unsatisfactory service could no longer be prevented from reaching the highest authority on the railroad. It meant that I as president would be brought closer in touch with the patrons than ever before. The officers and employees immediately began vying with each other to render a service of satisfaction—a service that would not result in complaints reaching me. Perhaps no innovation ever accomplished more for a railway system in stimulating the personnel and also in pleasing patrons than the invitation which we repeat every month for constructive criticism and suggestions in regard to the conduct of the Illinois Central system."

The placing of advertising in the newspapers also has served to emphasize, especially to the people of the smaller communities, that the Illinois Central system is a vital part of their community.

The plan which the Illinois Central system has followed in dealing with the newspapers is one to which Mr. Markham attaches great importance. The advertising has been placed directly from the offices of the Illinois Central at Chicago, and the correspondence with the newspapers which this has entailed has served to bring the newspaper men into touch with the Illinois Central's executive offices.

Editorials and articles appearing in the newspapers bearing upon railway questions have been carefully watched. In the few instances where articles or editorials have been published giving misinformation or false conclusions, Mr. Markham has written the editors, correcting their misinformation

or giving such comment upon the problems which they discussed as might help them to form correct judgment.

The newspapers received the innovation warmly at its inception, but as the work has progressed and as they have had opportunities to observe that the road is not trying to "put something over," but on the other hand is devoting its space in the newspapers to telling simple stories based upon truth in regard to the railroads, the newspapers have become even more friendly to the plan.

The public relations movement has by no means been confined to Mr. Markham. When the program was begun, local or division officers were given an outline of the plan to be followed and were instructed to call in person or have members of their staff call upon the newspaper men in their territory and keep in touch with them.

"This served to form still another valuable point of contact between the railway organization and its patrons," Mr. Markham said. "The officers and principal employees of the system have been advised from time to time as to the progress of the public relations work and have displayed great interest in keeping up their part of it."

#### Material for Officers on "What to Talk About"

One phase in particular of the plan for making the division officers and principal employees a part of the public relations campaign should be of special interest. The traditional reticence which has come down from the early days of railroading left its mark upon the under-officials, as well as the heads of the railway systems. Well-informed officers and employees have been reluctant to discuss railway problems, and it has developed that some of the comment upon railway affairs which has reached the public as coming from railway men has come from those who have not been well informed upon the subjects they chose to discuss. The Illinois Central has attempted to correct this by urging officials of all grades and employees to talk about railway questions with the public; not only that, but it has furnished them with the material upon which to base those discussions. A monthly bulletin entitled "Things to Talk About" is published under the direction of Mr. Markham and sent to all officers and the principal employees of the system. They are instructed to take this material and use it as the basis of talks at public gatherings, newspaper interviews and the like.

In order to give the officers and employees a working knowledge of the Illinois Central system's history, a pamphlet entitled "What Every Employee Ought to Know About the Illinois Central System" was prepared by the management and placed in their hands.

Another feature of the public relations program has been the cultivation of the farmers. One of the counties in each agricultural state served by the Illinois Central was selected, and a representative of President Markham was sent to interview a number of the leading farmers of the county about the railway problems with which the farmers have to deal.

The plan of the Illinois Central in seeking constructive criticism and suggestions was explained to the farmers and the comments which they made upon the service they had received were reported in the Illinois Central Magazine for the information of the officers and employees of the system. Such feasible suggestions as were brought out were put into practice. News stories about the interviews were released in advance to the newspapers in the Illinois Central's territory. These were printed and freely commented upon.

#### Conferences Between Farmers and Railways

One of the tangible results of the interviews with farmers was the formation of a railway committee by the Champaign County (Ill.) Farm Bureau. The railway committee holds meetings with railway men from time to time, the first meet-

ing being called shortly after the interviewer's visit, when an Illinois Central superintendent was invited to meet with the farmers.

The idea of giving patrons of the railway system a voice in the direction of the affairs of the system has made a particular appeal to the men who publish the newspapers in the cities and towns on the lines of the Illinois Central system. Scores of editorials have been written commending the management for its policy, and the newspaper editors have commented freely from time to time upon the problems which have been discussed in the public statements. It has not been unusual for literally hundreds of favorable newspaper clippings to be received by the Illinois Central during the course of a month.

The way in which the newspaper men look upon the Illinois Central's plan is expressed in a letter which an Illinois Central officer received recently from a Mississippi newspaper man. He said:

"We feel that the class of advertising which you have been using during the past year has been educational and has done a great deal toward a clearer understanding of the railroad company's point of view by the general public. It has certainly clarified some subjects in reference to the railroad's relation to the public for this writer."

An Illinois newspaper man had the following to say of the Illinois Central's policy when he was discussing another subject:

"For many months the Illinois Central has been conducting a campaign for 'service.' The idea that 'service' is the first essential in the conduct of its business is being drilled into the mind of every employee of that railroad. Recently the writer had occasion to ride over the Illinois Central and a number of other railroads, and the work that has been accomplished by this campaign of 'service' was clearly noticeable."

#### Comments of the Newspapers

A Mississippi newspaper man told editorially of President Markham's action in correcting a misstatement made by the correspondent of another paper, and said in his editorial:

"The incident is cited as an illustration of President Markham's free, open and straightforward method of dealing with the patrons of the Illinois Central . . . ."

"The head of the Illinois Central believes in publicity. He has no secrets from the general public. He is ready and willing at all times to show his hand, to give patient and courteous hearing to any complaint or criticism that may be offered, and do everything that is reasonable and within his power to satisfy the critic or complainant."

"Mr. Markham goes even further than this. For the past several months he has had a well-trained newspaper interviewer touring the various lines of the system for the purpose of actually soliciting complaints and grievances from patrons. This interviewer also solicits suggestions as to ways and means of bettering the service, and President Markham frankly acknowledges that some first-class ideas have been obtained through this method, and will be put into practical operation."

The following view was said in an editorial which appeared in a Chicago newspaper when the Illinois Central announced that the public relations work would be continued another year:

"Transportation is as vital to trade and prosperity as sound money and honesty. It is to business what blood is to human life and health. The Illinois Central system's policy has quieted many animosities as a constructive and harmonizing influence in business education. People are realizing that railroads are prodigious assets which add enormously to their prosperity and comfort, and not a menace or a liability or a civic burden."

A New Orleans newspaper made the following comment



the same day from the other end of the Illinois Central system:

"Co-operation brought about by mutual understanding works steadily and surely to mutual advantage. In the matter of preventable loss and damage, millions may be saved by that sort of teamwork, which is no less profitable, directly or indirectly, in other lines. Mr. Markham's experiment interested all students of railway problems. Its success under twelve months' test constitutes fresh evidence that the railway managements who give attention to the cultivation of their 'public relations' in sound and proper ways are rendering constructive and practically helpful service."

An Indianapolis newspaper, commenting editorially on President Markham's published statement relative to the direct taxes paid by the railroads in 1920, and the transportation tax on freight and passenger traffic collected by the railroads for the government during 1920, totaling \$511,678,631, says:

"It all came out of the railway receipts from the public.

The railways merely acted as the agency through which more than \$500,000,000 was turned into the public treasuries, and there was no way in which the war tax on freight and passenger receipts, which would relieve the public of paying about \$250,000,000, could affect the finances of the railways. They still would have to pay 183 per cent more taxes than they did back in pre-war days, and that money must come from freight and passenger revenues. The thought or hope of getting back to anything approximating the prices we formerly paid for transportation is out of the question while taxes and other expenses remain at post-war levels. The raises in rates granted to the railways have to cover much more than increases in wages, and there is small prospect for material reduction in some of those items, including that of direct taxes."

The newspapers in the territory of the Illinois Central system are full of such constructive comment as has been quoted, all of which results from President Markham's work in the field of railway public relations.

## Report of A. E. R. A. on Heavy Electric Traction

### Effort Made to Coordinate with Other Organizations—Locomotives and Multiple-Unit Cars Compared

THE report of the Committee on Heavy Electric Traction of the American Electric Railway Association was presented at the annual convention, held this week at Atlantic City, N. J. The committee outlined the work in progress by the A. E. R. A. and other societies in America interested in heavy electric traction, and suggested that much of the present duplication of work should be done away with. The term heavy electric traction was defined as it applies to locomotives and multiple-unit equipment, a progress report on electric switching locomotives was made, comparative advantages of locomotives and multiple-unit cars were outlined and much data presented in the form of charts, tables, and a bibliography. An abstract of the report follows:

It is evident that considerable valuable work is being accomplished by other technical organizations which would be of interest to the members of the American Electric Railway Association; and it is possible that the work of this association would be of interest to the membership of other organizations. It is recommended, therefore, that an effort be made to coordinate the activities of various organizations with the view of eliminating so far as possible overlapping and duplication and of making more valuable to the profession the work of the technical committees, much of which represents considerable sacrifice of time and energy on the part of the members of the several committees.

#### Electric Switching

The use of electric switchers in heavy railroad operation has been relatively slight as compared with that of electric road engines. Two railroads only, the New York, New Haven & Hartford, and the Chicago, Milwaukee & St. Paul have developed electric locomotives in connection with their operation especially for switching service. The New York Central, the Norfolk & Western, the Butte, Anaconda & Pacific, and the Pennsylvania at New York City do considerable switching with their electric road locomotives, but naturally these are not especially adapted to switching requirements. Inasmuch as satisfactory records are not available in regard to electric switching it is impossible at the present time to present data either as to relative costs or as

to the number of cars switched by electric as compared with steam locomotives under same conditions.

The Butte, Anaconda & Pacific has developed a tractor truck in connection with its electric switching at Butte. These tractors consist of a truck, weighing about 40 tons, with motors, which may be coupled to a road locomotive unit. The current collection and other functions are taken care of by the locomotive, the auxiliary equipment being connected by jumpers. The use of the auxiliary tractor is said to give 50 per cent more tractive effort, at about two-thirds the normal speed, when connected in series with a single locomotive. The device also accomplishes considerable saving in wear and tear on the resistance grids.

A very large number of light electric locomotives weighing from 20 to 60 tons are in operation at the present time which are doing valuable work in industrial switching, interurban freight service, etc. This type of engine is now practically standardized just as street railway and interurban equipment has become standardized. The locomotives operate usually at either 600 volts or 1,200 volts direct current.

Light storage battery locomotives have been employed to some extent for switching. A storage battery unit for yard switching is proposed and designs are under way. Certain advantages might be obtained by the use of a storage battery locomotive for switching, notably in territory where the passage over any individual track is infrequent.

#### Locomotives or Multiple-Unit Trains?

In suburban electrification of railroads the application of multiple-unit equipment provides a solution for many important problems. This has been especially noteworthy in the case of the Pennsylvania at Philadelphia, and the New York Central, New York, New Haven & Hartford, Long Island and New York, Westchester & Boston in the vicinity of New York. Where both local and through service are operated electrically, however, the problem as to the relative amount of traffic to be handled by electric locomotives and by multiple-unit equipment is somewhat complex, and any decision is necessarily based on local conditions.

In general the advantages of multiple-unit equipment as

compared to electric locomotives may be summarized as follows:

The long heavy multiple-unit train accelerates more quickly than a train of the same weight hauled by a locomotive. Where stops are frequent a material increase in scheduled speed is thus possible.

In a multiple-unit train the motor equipment is varied to correspond to length of the train, and thus is often more efficiently used than is the case with the electric locomotive, which being of a fixed and definite size cannot be so easily adapted to varying requirements.

The reliability of operation of multiple-unit equipment (several motive power units being employed in a train) is somewhat greater than that of electric locomotive equipment. In the event of a failure on the road, one of the motor cars may often be cut out of service electrically and the train thus enabled to reach the terminal with little or no delay by means of the remaining motors.

The multiple-unit cars, being heated electrically in winter, are free from all difficulty connected with oil-burning steam boilers, and although the cost of power thus used in heating may be considerable, this convenience of operation is valuable. One of the chief sources of expense in maintenance of electric locomotives is the steam heating boiler.

Perhaps the most important advantage of multiple-unit equipment as compared with electric locomotives is in switching, especially in crowded stub-end terminals. Locomotive-drawn trains, after arrival at the terminal, must be backed out to free the locomotive. This extra double move is often necessary when the terminal tracks are most congested. The multiple-unit train, on the other hand, practically as soon as it has reached the terminal is ready for the return trip.

There are some limitations, however, to multiple-unit operation as compared with electric locomotives. Multiple-unit cars in general can be operated economically only over tracks equipped with an energized third rail or trolley (although occasionally this type of equipment is hauled outside the electric zone by steam locomotives for short distances). The result is that the cars are not available for duty outside the electrified territory in the event of a local heavy traffic demand elsewhere.

The mileage of multiple-unit motor equipment is often less than that of an equivalent electric locomotive, on account of traffic limitations. The multiple-unit motive power cannot be interchanged between local and through trains. This means that owing to the limitations of traffic, especially in the case of the so-called "fleet movement" of commuter's trains (heavy traffic in the morning and evening with little mid-day travel) much of the multiple-unit equipment can make but one round trip a day. The electric locomotive, on the other hand, which is available for hauling either local or through trains may be more intensively and thus more economically operated in this respect.

The maintenance, reduced to a seat-mile basis, is usually higher with multiple-unit equipment than in the case of electric locomotives and standard trailer coaches.

The decision between multiple-unit and locomotive equipment in each individual case is governed by local considerations. The excess cost of multiple-unit car maintenance is often offset by the saving made possible in terminal tracks, on account of elimination of switching requirements. In general, it may be said that each type of equipment has its definite place in the heavy traction field.

In designing multiple-unit equipment there is some question as to the relative advantages of trains made up of all motor cars as compared with motor cars and trailers. This question involves careful study and equipment as well as terminal characteristics. One railroad which started electric

operation with mixed motor car and trailer trains has since equipped all cars with motors, while another railroad which started operations with all motor cars has revised the initial policy by acquiring trailers.

### Charts, Tables and Bibliography

The chart showing the growth of steam railroad mileage electrified and electric locomotive tonnage in heavy traction service in the United States and Canada indicated that track mileage and locomotive tonnage has increased at approximately a constant rate from 1905 to the present time, and that now there is something more than 2,600 miles of track electrified and over 52,000 tons of locomotives in service in the United States and Canada.

### Discussion

The greater part of the discussion was offered in the form of a short paper, presented by H. H. Norris, managing editor, *Electric Railway Journal*, suggesting how an American committee on electrification might be formed, and expressing the need of such a body as follows:

"In opening the report this year with a synopsis of the electrification activities of the committees of the several national societies concerned with heavy traction, the committee has taken one step towards the formation of an American Committee on Electrification. The compilation shows that there is much duplication of effort among the committees, which could be avoided through the functioning of such a joint committee. Such a national committee could act as a clearing house for all information on this subject. On one hand it could suggest topics appropriate for consideration by the several special committees, and on the other hand could collect on its own account the data which would be of general interest. The value of a central, co-operative and unbiased agency of this kind would be very great.

"As an example of the kind of thing such a co-operative committee could do nothing would serve better than the elaborate bibliography which the committee has been able to present this year in collaboration with the Association of Railway Electrical Engineers. Here is illustrated co-operation on a limited scale. A joint committee could maintain such a bibliography continuously. This bibliography furnishes an excellent start. It will stand some editing and condensation. Having printed this year the complete list, the association might later provide a condensed list of the most important articles, including a brief summary of the salient features of each. This could be made to include articles published up to the date of the completion of the list. The danger of unconscious padding in a list of this sort lies in the fact that an important electrification is reported by the leading domestic and foreign papers in all degrees of completeness and balance. The best one or two of these would suffice, although mention could be made in small type of a few other articles on the same subject for the benefit of those who might not have access to the papers mentioned first.

"It is to be hoped that this bibliography will be used in such a way as to justify the considerable expense and effort involved in compiling and publishing it. It might be well to reprint it in pamphlet form for miscellaneous distribution. A nominal price could be put upon the pamphlet and the association could advertise it along with other reprints, so that its existence would not be forgotten.

"The compilation of the locomotive and multiple-unit car data, which the committee was able to get up with the co-operation of the two large manufacturers of heavy traction equipment, is one of the outstanding features of the committee's report and of the year's work. Particularly noteworthy is the table of multiple-unit car data. The admixture therein of data regarding heavy multiple-unit car prac-



tice on steam roads, interurban lines and rapid-transit urban lines, together with the general similarity of these data, indicates the substantial similarity of short-haul, high-speed passenger service under these different auspices. This is, we hope, a prophecy of the time when there will be a greater community of interest between the steam and electric roads in relation to suburban passenger traffic.

"It is unfortunate that the chart presented by the committee shows a zero rate of increase in electrification in 1920, after a steady, although small, rate from 1905 on. This slump merely reflects the financial condition of the steam roads. It will cease when conditions improve. There are electrification projects now developing which will at least restore the normal rate of increase; for example, the Lackawanna Railroad has been making definite plans for a considerable undertaking. The Illinois Central is, of course, on the eve of an important terminal electrification at Chicago. One of the most heartening announcements was recently made of a \$7,000,000 contract for railroad electrification in Chile.

"There has been some question as to the appropriateness of the electrification activity on the part of the American Electric Railway Engineering Association. The basis of this criticism is that the matter is properly one for the steam railroads to consider and push. It is true that no electrification project is possible unless the railroads are convinced of the savings that can thus be effected. At the same time we can well look at this matter from the other side. Electric traction, having demonstrated its success under steam road conditions, is looking for new fields to develop. It is to be expected, therefore, that initiative will be exerted by the electrical manufacturing and operating interests who are looking for new worlds to conquer. The steam railroads will necessarily be somewhat conservative in regard to this matter, partly from financial consideration, partly because they have so much money and talent tied up with their steam equipment. The electrical interests have a 'selling proposition' of enormous magnitude."

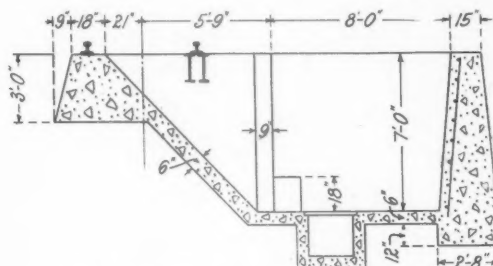
J. H. Davis, electrical engineer, Baltimore & Ohio, called attention to the fact that the diagram accompanying the report indicates that the first electrification work in the United States was started in 1903, while actually it was done in 1895.

W. B. Potter, General Electric Company, spoke of the activities in railway electrifications in foreign countries and said that many steam railroads in this country were waiting only for more favorable circumstances. Comparative operating expenses of steam and electric traction, he said, have been fairly well established, and he closed his remarks by prophesying that with better financial conditions and the development of super-power zones, electrification will progress rapidly.

### A Novel Cinder Disposal Plant

AT THE ENGINE TERMINAL of the Akron, Canton & Youngstown at Brittain, Ohio, is an ash handling system which presents a number of interesting features in ash disposal at cinder pits. Essentially, the system at this point consists of a depressed pit below a track where the engines may be "spotted" and dumped before entering the roundhouse, and a steam discharging arrangement by means of which the ashes may be removed from the pit and discharged into a cinder car. The cinder pit, which is constructed of concrete, extends 12 ft. (inside dimension) along the track and about 10 ft. to one side and is divided into two compartments by a concrete wall which extends entirely across the pit parallel to the track except for a vertical opening of 2½ ft. at the center; the cross-section in the drawing is taken through this opening.

The compartment thus formed, which is below the track, is so constructed that the three outside walls of the pit slope from their tops to the bottom of the opening in the cross partition, while the other compartment has a level bottom which makes it possible for a man to rake the ashes from below the track, through the opening in the partition and over the trap of the ash-handling arrangement; the latter is similar to the equipment installed in power plants, etc., whereby ashes and cinders are removed by the force of steam injected



Cross-Section Through the Cinder Pit

into that end of the pipe line below the floor. The steam for operating this system is obtained from the engines on the cinder track, each locomotive being equipped with a quick-acting screw connection in the steam dome.

This plant was put in operation in January, 1921, and is reported to be giving satisfactory service. Originally, it was intended that the cinders should be discharged from



A View of the Cinder Plant at Brittain

the pit immediately upon being dumped, but it was found that the pit afforded a sufficient capacity to permit the dumping of about three locomotives before cleaning of the pit was required. With respect to the operation of the installation, it was found that the complete cycle of dumping ashes and removing them from the pit required from 15 to

20 min., distributed as follows: 10 minutes for "pulling" the fire, five minutes for blowing the cinders and from two to three minutes for connecting and disconnecting the steam connection to the engine. The operation of blowing the cinders out of the pit and into a cinder car, requires considerable steam, but the amount of steam remaining in the locomotive has always been sufficient to move the engine into the roundhouse. In operating the system it has been found best not to wet down the cinders while in the pit, the established practice being to spray the water into the pipe conveyor near the upper end, thus killing any fire remaining in the ashes and coals.

The ash conveyor system is a product of the Conveyor's Corporation of America, Chicago, Ill. We are indebted for the information and illustrations of this equipment to S. S. Senter, chief engineer of the Akron, Canton & Youngstown.

## Safety First Must Be a State of Mind\*

By Prof. William J. Cunningham

**D**URING THE YEAR 1920 the aggregate of the payments made by the railroads of the United States on account of personal injury to employees, passengers, and others was over \$53,000,000; and a large proportion of the accidents resulted also in damage to property. Every injury to an employee had the effect of disturbing the organization when his work was temporarily assigned to another with less experience. Every case of personal injury to a passenger had a harmful effect on morale and upon public good will.

These factors cannot be measured in dollars and cents, but including all factors the railroad expenditures on account of accidents which caused personal injury in 1920 were certainly far in excess of \$100,000,000.

Some 12 years ago R. C. Richards, of the Chicago & North Western, launched the first organized drive against carelessness in this field. It was he who conceived and inaugurated the first systematic and comprehensive plan for stopping railroad accidents at the source. The North Western quickly began to show gratifying improvements in its accident record, and the idea was widely copied. Many extensions have been made to Mr. Richards' original plan and many innovations introduced. \* \* \* Interest and co-operation

on the part of the workers is absolutely essential to success. Many skillful specialists have emerged and the technique of safety-first practice covers a wide range of activity. \* \* \* But it may not be amiss to offer three suggestions, which in a small measure imply criticism of current methods. There is an inclination on the part of the specialists to overdo in administering stimulants. At times the propaganda has bordered upon the sensational and the appeals have been too emotional. Safety first, to be really effective, must become a state of mind—not an element in organization. That state of mind cannot be attained by sporadic or sensational appeal. It must be developed gradually, naturally, continuously.

Unlike the problem of floating an issue of Liberty bonds we are selling an ideal. When we sell the ideal of safety first the transaction has just begun. The real task is to keep it sold. There are no return privileges with the sale of the bond. With safety-first the purchaser may backslide if his interest is allowed to wane. The spectacular methods adopted by the Liberty loan committee during the war period cannot be equally effective in promoting the general adoption and continuance of safety first principles. A flaring placard in which a skull and crossbones are the most prominent feature in giving point to an admonition against carelessness may compel attention, but the mental reaction in many cases is that of amusement or ridicule.

The second suggestion is that in some quarters there is a tendency to exalt the organization. An organization should, as far as practicable, be held in the background. The appeal must be to the individual. The most successful leader is one who by indirection rather than by fiat can induce his men to adopt his ideas as their own.

When a mechanic is told that he must wear goggles to protect his eyes against flying particles of metal and is reminded that no one but a fool would work without them, the natural reaction is one of resentment against interference with personal liberty. But if by indirect suggestion the mechanic can be made by his own process of reasoning to come to the conclusion that the use of goggles is desirable the chances are that he will demand that goggles shall be furnished.

The third suggestion is that the importance of safety appliances should not be overemphasized. Paradoxically, it often happens that the most dangerous operation is the safest. Its very danger begets respect and inspires care. An appliance which eliminates one-half of the risk may eliminate all of the care. The chief field for cultivation is the state of mind and the habits of the individual worker.

\*Abstract of a paper read before the Safety Section of the American Railway Association at Boston, September 26, 1921.

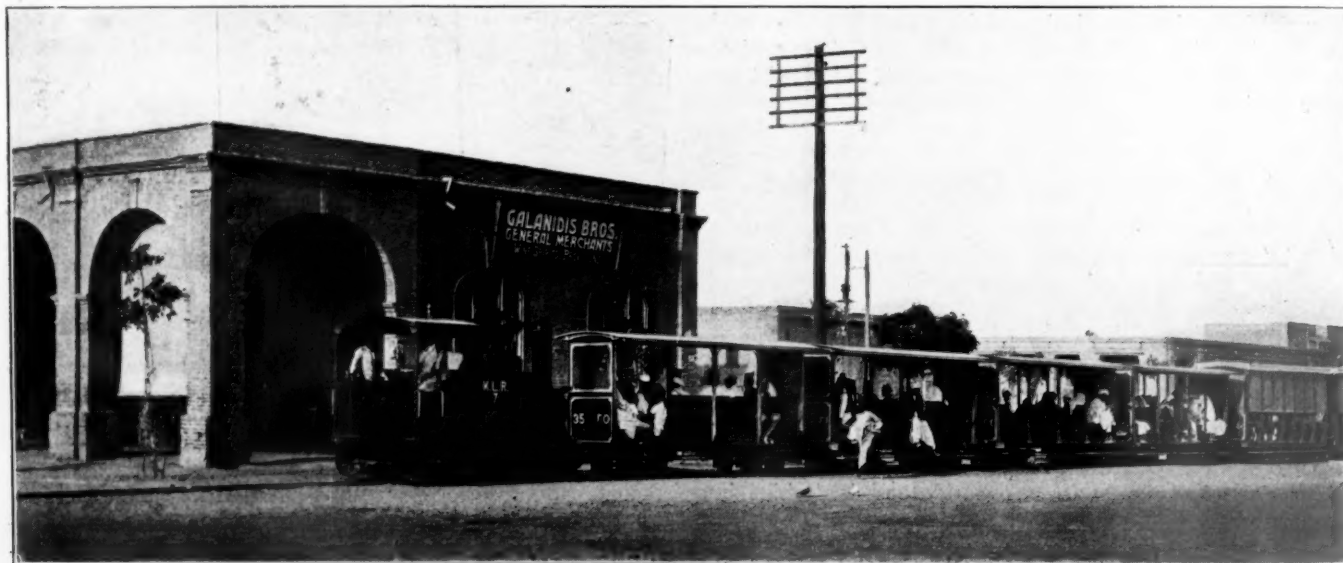


Photo from Ewing Galloway

A Railway at Khartoum, Egypt



## Short Lines Begin Series of Regional Meetings

THE FIRST of a series of regional meetings of the American Short Line Railroad Association was held at Chicago on October 4, approximately 50 representatives of members of the association participating in the discussion of various phases of the present railroad situation and its relations to the short lines. The object of the meetings being primarily to disseminate information, no fixed program was arranged. Instead a list of subjects of interest to all short lines was issued with the call to the meeting and the discussion closely followed this topical outline.

The effect of the present freight and passenger rates on the movement of traffic and upon the revenues of the short lines; the present divisions on interline roads and the work that is being done to obtain more equitable divisions; the work of the Railroad Labor Board and its effect upon the short lines; settlements with the government; the requirements of the Interstate Commerce Commission; federal valuation; consolidations; the railway mail pay question; motor truck competition; the consolidation of purchases for the short lines and the prospect for new railroad legislation in both Congress and the states were topics taken up at the meeting.

Two resolutions were adopted at the meeting, one of which urges the short lines to defend the transportation act under the terms of which these carriers have been greatly benefited. This resolution declares the transportation act to be most constructive piece of railroad legislation ever passed, and that if it is given a fair trial it will ultimately save the railroads, whereas if it is not given a fair trial, government ownership will be unavoidable. The second resolution recommends the continuance of the consolidated purchasing agency which was recently established by the association, and which has, according to the resolution, already demonstrated its success in obtaining materials and supplies for the short lines at the same rates quoted to large trunk lines.

A great deal of time was given to the discussion of railroad legislation both that which has already become law and that which is contemplated. Several of the officers of the Association stated that the short lines have gained much by the terms of the Transportation Act and other recent legislation and that it was essential that every means be taken to insure that this legislation is not so changed as to take away the advantages which the short lines have gained.

The call to the meeting, discussing the need for information regarding present conditions, said:

"The transportation companies of the country are now surrounded by more and greater adverse conditions than ever before, and this is especially true of short lines. These present bad conditions are apparently growing worse, and they not only justify but demand that every owner and officer of such lines carefully and deeply study the situation, which is now so complex that nothing less than full information will enable them to protect their properties; and after having obtained necessary information, to aid in the work of re-establishing the railroads in a healthy and serviceable condition."

In all of the discussion, the officers of the association endeavored to impart this necessary information.

Similar meetings were held at St. Louis, Mo., on October 5, and at Kansas City, Mo., on October 6. Additional meetings have been arranged as follows: Denver, Colo., October 8; Salt Lake, Utah, October 10; Portland, Ore., October 12; Seattle, Wash., October 13; San Francisco, Cal., October 17; Los Angeles, October 18; Houston, Texas, October 24; New Orleans, La., October 25, and Atlanta, Ga., October 27. Meetings have also been arranged for New York and Harrisburg, Pa., but the dates have not been fixed as yet.

## Cutting Down the Labor Cost

A PRACTICAL ILLUSTRATION of what may be accomplished through the use of material handling equipment is illustrated by the following account of the use of a locomotive crane in the handling of ties at the treating plant of the Atchison, Topeka & Santa Fe at Albuquerque, N. M. The crane was a 15-ton Standard crane manufactured by the Industrial Works, Bay City, Mich. The information was supplied by W. E. Jackson, superintendent of the treating plant.

The daily capacity of the plant, with the zinc chloride treatment, is six charges or 96 tram-car loads of 7 in. by 8 in., 8-ft. sawed pine ties. The trams average 43 ties, making the daily output 4,128 ties.

A single load of freshly treated ties weighs approximately 7,955 lb.

Thirty trams at a time are drawn by the locomotive crane



Piling Ties 20 ft. High

from the cylinder to the unloading piles, a distance of more than half a mile. The use of a double-chain sling enables the complete load of 43 ties to be picked up at one time and placed on the pile, the crane working at a 32-ft. radius when piling on the outside tier. An advantage of this method of piling ties is the ease with which they can again be loaded by the crane.

If manual labor was employed to handle these ties by hand, it would cost at least \$2 per 100 ties, whereas the work is accomplished by the crane at the rate of 37 cents for the same number. Loading freshly treated ties by hand requires two men to the tie and these men could pile them only shoulder high, while the locomotive crane piles them at a height of 20 ft.

## General News Department

By a fire on an old pier of the Erie Railroad at Twelfth street, Jersey City, N. J., on October 1, eight carloads of hides, with a part of the pier, and other property, were destroyed; estimated loss \$100,000.

Railway agricultural department representatives will hold a convention in connection with the National Dairy Show to be held at the Minnesota state fair grounds at St. Paul, Minn., beginning on October 8.

A fire in the car shops of the Missouri, Kansas & Texas at Wichita Falls, Tex., on September 20, damaged the woodwork mill, several freight cars, a crude oil tank and the entire machine shop equipment. Estimated loss, \$75,000; cause, unknown.

The Pajaro Valley Consolidated Railroad Company, operating between Salinas and Spreckels, California, a distance of 41 miles, having been authorized by the state railroad commission, will discontinue certain trains and run automobile stages in place of them. The stage line will parallel the railway and will carry passengers, baggage and express at the same rates as are charged on the trains.

Damages amounting to \$180,000 were paid to the Pennsylvania Railroad by the city of Chicago on September 28, the payment closing a legal contest which had started in 1894. The railroad had obtained in 1905 a verdict of \$105,000 against the city for damages caused by the trainmen's strike of 1894 and the accompanying riots. The case was appealed and lost again by the city, and the interest on the original judgment continued to mount until \$180,000 was required to settle the case.

Employees of the Lehigh Valley in the last 14 months have bought stock of the road to the extent of 6,482 shares. An officer of the company says that 1,348 employees have become stockholders. The per capita subscription in October, 1920, was 4.36 shares; in October, this year, it was 4.80 shares. The company buys the stock for the employee in the open market, and it is paid for at a rate of \$5 a month a share. Interest is allowed on the part payments at the dividend rate carried by the common stock, which is 7 per cent annually.

The Southern Railway Company has filed a suit in a state court in North Carolina asking an injunction to suspend the collection of taxes assessed against the company in that state, protesting against changes in valuation which have disturbed the relation between the taxes on railroad property and those on other property. A few days later the Atlantic Coast Line entered a similar suit in the Federal Court. According to an account in the Raleigh News and Observer, the Atlantic Coast Line, in taking action in the Federal Court, has violated an agreement by which it agreed to regard itself as a North Carolina corporation, as regards its property in that state.

The Pennsylvania Railroad, since May 15, has taken on about 14,000 men, the total number of employees now being 199,000, as compared with 184,625 on May 15. President Samuel Rea, in giving out these figures, said: "It is the purpose of the Pennsylvania to co-operate as far as possible with President Harding's efforts to reduce unemployment. It is our hope that still more men will be needed. We intend to utilize the additional men chiefly in putting our idle cars in order prior to the coming of winter. We have at present on the Pennsylvania system 82,149 idle cars, of which 46,691 have been stored without being repaired. None of the latter are required for current use, or, as far as can be foreseen, are likely to be needed this fall. In all probability it might be perfectly safe to defer their repair until next spring, but

we feel that if we put them in order we shall not only be prepared for a revival in business but shall also be assisting in President Harding's endeavor to improve the general employment situation."

### New England Railroad Club

The regular meeting at the New American House, Boston, on Tuesday evening, October 11, will be "Canadian Night," with an address by F. L. Wanklyn, general executive assistant of the Canadian Pacific, on the Organization, Mobilization and Activities of the Canadian Overseas Railway Construction Corps. He will show a number of lantern slides. There will also be an address by Grant Hall, vice-president of the Canadian Pacific.

### New York Signal Engineers

Fred W. Bender, chairman of the New York sectional committee of the Signal Section of the American Railway Association, announces that a meeting of the committee will be held at Hotel McAlpin, 34th street, New York City, on Thursday evening, October 20. Progress of Railroad Signaling in America will be the subject of an illustrated address by H. S. Balliet, secretary of the Signal Section; and W. H. Arkenburgh, of the National Carbon Company, will speak on dry batteries and carbon brushes. All men interested in signaling are invited to attend.

### American Engineering Council's New President

Mortimer Elwyn Cooley, dean of the College of Engineering and Architecture of the University of Michigan, was elected president of the American Engineering Council of the Federated American Engineering Societies at a meeting of the executive board of the council held at the Cosmos Club in Washington, D. C., on September 30. Dean Cooley assumes office at once and will carry out an extensive program in the interest of the public and the profession of engineering.

### Rains Cause Heavy Damage in Northern Mexico

Railroad property in northern Mexico has been greatly damaged by heavy rains during the past three months and operation of the lines has been correspondingly hampered. The present rainy season in the northwestern section of the state of Chihuahua has been the heaviest since 1907, the only rainy season approaching the severity of the present year being that of 1914. The rains have caused a considerable number of washouts and slides, sections of track have been washed away and many bridges, small buildings and structures have been moved from their foundations.

### Cause of the C. & N. W. Elevator Explosion

A report on the cause of the grain explosion in the Chicago & North Western elevator at Chicago, which resulted in the death of six persons and the loss of \$3,000,000 in property, was presented before the Western Society of Engineers on October 3, by David J. Price, engineer in charge of development work, U. S. Department of Agriculture, Washington, D. C. Mr. Price attributed the cause of this explosion, which occurred on March 19, to the ignition of dust clouds from an incipient fire in the driers. According to the speaker, the recurrence of such explosions can only be prevented by the elimination of dust, which is an exceedingly difficult problem, owing to the grain handling rules and statutes prohibiting the removal of the dust before the grain is taken into the elevator for weighing.



## Accounting Rules Amended to

### Provide for Stock of No Par Value

The Interstate Commerce Commission has amended the text of its uniform system of accounts for steam railroads to provide for accounting and reporting in connection with capital stock having no par value, which the commission has recently authorized in the case of several roads. The amended rules provide that when certificates or receipts issued to represent permanent interests in the accounting company, and such certificates or receipts have no par value, they shall be included in the accounts at the amount corresponding to the cash received or the cash equivalent if the consideration is other than cash.

## Hearing on Short-Lines' Claims

The Interstate Commerce Commission has announced that argument will be heard before the commission at Washington on November 4, on the question of the proper construction of the word "deficit" as used in paragraph a of section 204 of the transportation act, which provides for the reimbursement of deficits of short line railroads for that portion of the period of federal control during which they operated their own lines. The American Short Line Railroad Association has taken the position that this guaranty provision provides for the reimbursement of losses during that period and the commission has thus far held that carriers are not entitled to the guaranty unless they actually sustained a deficit. Notice of the hearing was served upon officers of the Short Line Railroad Association.

## Railroad Hearings to be Resumed

The Senate Committee on Interstate Commerce has decided to resume hearings in its general investigation of the railroad situation at Washington on October 13, the first witnesses to be representatives of the railroad brotherhoods. Frank J. Warne, their statistician, is to be one of the witnesses. The committee has called a meeting for Friday of this week to consider other matters pertaining to railroad legislation, including the valuation bill, on which some hearings have been held, to strike out the requirement that the Interstate Commerce Commission report the excess cost of acquisition of land, also the bill to authorize the War Finance Corporation to purchase railroad securities from the Railroad Administration, and possibly some of the bills designed to restore the power of the state railroad commissions to reduce rates.

## The Railroad Service as a Career

The Illinois Central, in its latest newspaper advertisement, says: "Right now, when optimism in all branches of industry is needed more than ever before, we begin to note an unorganized but none the less effective effort to make railway work appear unattractive to our young men. Non-railway men have expressed discouraging views and even some railway officers have lent their opinions to this unprogressive effort. For the most part, fortunately, these views are merely opinions without a statistic in support."

"We of the Illinois Central do not subscribe to these pessimistic opinions in any single particular. We believe—indeed, we know—that the present-day complexity of railway organization demands men better trained and more resourceful than ever before, and that opportunities for advancement, to the right men, are as good as they ever were."

After discussing the attractiveness of railroading as a business from the young man's viewpoint, and the three factors of opportunity, compensation and adventure, the article presents a brief statement of the ages of the men occupying executive positions on the Illinois Central, thus: 85 of these positions are held by men less than 30 years of age, 122 are held by men between 30 and 35 years of age, and 213 are held by men between 35 and 40 years of age.

"This," the article concludes, "proves that opportunities still exist in the railway business. The same effort wins in railway work as in other lines and the final reward compares favorably with those in most competing industries."

## New York Central Employees

### May Become Stockholders

The New York Central announces that, by a vote of the board of directors, the company will buy shares of its capital stock for employees and allow them to make payment in monthly instalments. The announcement says that stocks may be paid for in 24 instalments, to be deducted from the employee's pay in the first half of each month. An individual may buy from one to 15 shares. On money lent to him by the company, interest will be charged at the rate of 6 per cent. The company has no stock for sale and purchases must be made in the open market.

The company explicitly states that whether or not an employee chooses to become a stockholder, his status as an employee will not be affected in any manner. Provision is made in the plan for proper adjustment in the event of the resignation, permanent disability or death of any employee subscribing for stock.

Employees are not to be urged to purchase stock. Employing officers are called upon to thoroughly familiarize themselves with the plan, so as to be prepared to explain fully any of its features to employees interested; and to be careful not to approve an application except when reasonably assured of the ability of the employee to carry out his contract without unduly taxing his resources. In special cases where unforeseen circumstances may arise which would make it impossible for the employee to meet his obligations, exceptional consideration may be given.

## National Association of Railway and

### Utilities Commissioners

The thirty-third annual convention of this association will be held at Georgian Terrace Hotel, Atlanta, Ga., beginning on Tuesday, October 11, and continuing probably four days. The call for the meeting sets forth that the rights of the states in the regulation of railroads is still challenged by the great railroad corporations and that it is the duty of this association to expose unfounded assumptions and claims. The officers of the association appeal to every state to send as many representatives as possible.

A partial program shows the following speakers: On Tuesday afternoon, Hon. John E. Benton, general solicitor of the association. On Wednesday afternoon, Hon. Joseph B. Eastman, member of the Interstate Commerce Commission. On Friday, Hon. M. H. Aylesworth, of the National Electric Light Association.

Reports of committees will be presented on the second day, Wednesday, in the forenoon, and presentation of reports will be continued thereafter, as opportunity offers, subject to regulation by the executive committee. On Wednesday, at 12 o'clock, the annual election of officers will take place.

On Wednesday afternoon there will be a round table discussion on "After-the-war-phases of regulation," to be led by Hon. E. I. Lewis, member of the Interstate Commerce Commission, and on Thursday afternoon, one on automobile transportation, omnibuses and jitneys, led by Hon. George McAneny, of New York City.

The president of the association is James A. Perry, of Georgia, and the secretary, James B. Walker, 49 Lafayette street, New York City.

## Conference on Public Ownership

The Public Ownership League of America, the National Non-Fartisan League, the Plumb Plan League and other radical labor, farmer, civic and commercial organizations have issued a call to a public ownership conference which is to be held in Chicago on November 19-21. The invitation states that the purpose of the meeting is "to bring together the representatives of all progressive groups in America—organized labor, organized farmers, civic, educational, business and religious bodies and individuals of all classes who are interested in and earnestly seeking a better and more efficient organization, operation and democratic control of our basic public utilities; to bring into counsel the leading advocates and representatives of municipal and public ownership in the United States and Canada, for the consideration and study of the problems involved; to get the ideas of the most careful and competent utility experts in America; to hear the methods and plans of those who have

made a success of public ownership; and to consider ways and means for advancing the public ownership, efficient operation and democratic control of public utilities and natural resources!"

Among the men who have been invited to speak before this conference are William G. McAadoo, former director-general of railways, on "Will Public Ownership Solve the Railroad Problem?"; Senator Robert M. LaFollette, on "The Repeal of the Esch-Cummins Bill as the First Step Toward Public Ownership of Railroads"; Warren S. Stone, grand chief of the Brotherhood of Locomotive Engineers; Timothy Shea, vice-president of the Brotherhood of Locomotive Enginemen and Firemen; Frank Hodges, secretary of the Miners' Federation of Great Britain; John Lewis, president of the Illinois State Federation of Labor; Alexander Howatt, president of District 14, United Mine Workers of America, and Glenn E. Plumb.

### Improved "Ferry-Car" Service on the Pennsylvania

The Pennsylvania Railroad, in its central region, by getting shippers who load freight at their stores and factories into "ferry" or "trap" cars to load in geographical order, has made a marked improvement in that branch of the service and has received commendatory letters from numerous patrons.

Shippers have been furnished with loading guides, which show in a simplified manner the correct loading to be followed; and after six months' trial the majority of shippers have permanently adopted them. Efforts are now being made to secure the co-operation of all others using the ferry car service. Both railroad men and shippers feel assured of a great improvement in expeditious handling of l. c. l. freight. Heretofore this freight was loaded indiscriminately, that destined to Eastern points being loaded in the same car with miscellaneous shipments destined to Western or Southern points; and every car had to be moved to adjacent freight stations or transfers, where the shipments were sorted and reloaded. With the new loading guide the shippers are able to assemble their shipments and so regulate their loading that the car can be forwarded to the proper transfer, the same as would be done with a car loaded at the freight house. Moreover, shippers find that it is advantageous to them to hold their shipments several days, and thus assemble a load for a proper transfer; and as compared with the old plan of indiscriminate loading the shipments reach destination more promptly. The plan is so flexible that the individual shipper can set up a ferry car program to meet his own peculiar needs. Important economies are made possible because of reduced handling of freight at intermediate transfers, the car supply is improved, and congestion is relieved at many local stations.

A report for the first six months shows that approximately 16,500 "ferry" cars were loaded in accordance with the loading guide and forwarded from industrial plants without the intermediate handling that formerly was necessary.

### Roads Earned 5 Per Cent in August

A preliminary compilation of the reports of revenues and expenses of 200 Class 1 railroads to the Interstate Commerce Commission for the month of August shows a net railway operating income for the month of \$90,221,000, which is the largest that has been reported for any month since the increased rates became effective last year. Reports of only two Class I roads, the Duluth, South Shore & Atlantic and the Duluth, Winnipeg & Pacific, are missing from this compilation. To earn a 6 per cent return on the valuation tentatively adopted by the Interstate Commerce Commission for rate-making purposes, the Class I roads should have earned \$108,000,000 in August, but a net of \$90,000,000 is at the rate of 5 per cent for a year and represents a closer approximation to a 6 per cent return than has been reported since the transportation act became effective.

The total operating revenues for the month were \$504,957,000, a decrease of 8.9 per cent as compared with August, 1920, while the total operating expenses were \$381,787,000, a decrease of 44 per cent. The net operating income compares with a deficit for August, 1920, of \$158,000,000, but in this connection it should be recalled that the operating expenses for last August included approximately \$79,000,000 of retroactive wage payments under

the order of the Railroad Labor Board. The actual reduction in operating expenses is, therefore, less than that indicated.

August completes a full year under the increased rates. On the basis of the preliminary returns the net operating income for the year was approximately \$530,000,000, or \$586,000,000 less than a 6 per cent return, which for the Class I roads would be \$1,116,000,000 for the year. The actual return, therefore, for the year was about 2.8 per cent.

The summary for 200 roads is as follows:

District	1921	1920	Per cent of increase 1921 over 1920
Total operating revenues:			
Eastern District .....	\$222,449,000	\$252,024,000	d 11.7
Southern District .....	71,699,000	83,445,000	d 14.1
Western District .....	210,809,000	218,965,000	d 3.7
United States .....	504,957,000	554,434,000	d 8.9
Total operating expenses:			
Eastern District .....	176,484,000	315,824,000	d 44.1
Southern District .....	60,673,000	94,213,000	d 35.6
Western District .....	144,630,000	271,165,000	d 46.7
United States .....	381,787,000	681,205,000	d 44.0
Net railway operating income:			
Eastern District .....	32,244,000	Def. 78,398,000	....
Southern District .....	7,461,000	Def. 13,175,000	....
Western District .....	50,516,000	Def. 66,945,000	....
United States .....	90,221,000	Def. 158,518,000	....

### Pennsylvania Athletic Meet

More than 1,000 contestants (winners in a series of elimination games in which 25,000 employees participated) took part in the second annual Pennsylvania System athletic championship meet held at Dennison, Ohio, on Saturday, September 24. Seven thousand employees and their families went to Dennison in 17 special trains from Philadelphia, Pittsburgh, Columbus, Cleveland, Chicago and St. Louis, and with townspeople of Dennison and Urichsville, the crowd in Panhandle Athletic park was swelled to about 25,000 people.

The athletes from the Eastern Region won the meet with a total score of 102 points. Next came the Central Region with 45, the General Office in Philadelphia with 33, the Northwestern Region with 26, the Southwestern Region with 13 and Altoona Works with 3. The special features of the program this year were tennis and a 50-yard dash for women employees, and also dashes for the sons of employees. The program began at 9 a. m. with tennis and trap shooting followed by swimming events and trials in track and field events. The finals in all events were run off after lunch.

In the first of a three-game series for possession of the Atterbury Cup awarded annually to the championship baseball team on the Pennsylvania System, the Columbus Division defeated the Philadelphia Terminal Division by a score of 8 to 4.

Vice-president James A. McCrea presented medals to the individual and team winners of first, second and third place in each event.

Among the honorary referees who were present on the field were Benjamin McKeen, vice-president in charge of the Southwestern Region; Elisha Lee, vice-president in charge of the Eastern Region; J. G. Rodgers, vice-president in charge of the Northwestern Region; R. E. McCarty, general manager of the Central Region; I. W. Geer, general manager of the Southwestern Region; T. B. Hamilton, general manager of the Northwestern Region; C. S. Krick, general manager of the Eastern Region, and P. F. Smith, Jr., manager of the Altoona Works.

Otto Schroll, P. P. Neff and H. B. Chaffin acted as referees.

The local committee in charge of all arrangements included F. A. Kerner, chairman; H. B. Chaffin, J. S. Albright, J. H. Baker, H. L. White, C. P. Davidson and C. M. Speed. For the Pennsylvania System the committee consisted of John T. Coleman, chairman; C. E. Clay, M. Y. Shuster, V. C. Ernest, E. F. Ewing and C. S. McIntyre.

The Chamber of Commerce in Dennison and Urichsville, the local post of the American Legion, the local churches and other organizations united to make excellent arrangements for feeding the large crowd. Playgrounds were provided for the small children, a field hospital tent was set up near the entrance to the park, and convenient information booths were located about the grounds. The visitors came away with the highest impression of Dennison and Urichsville hospitality.



## Traffic News

A reduction of 20 per cent on all rates over 50 cents per 100 lb., on live stock shipments from the prairie provinces of Canada to St. Paul and Chicago, has been made by the Canadian Pacific.

C. E. Carson, general agent at Chicago for the Fort Dodge, Des Moines & Southern, has been appointed manager of the Traffic Club of Chicago, effective September 15.

### Coal Production Increases

Continued improvement marked the production of bituminous coal in the week ended September 24, according to the weekly bulletin of the Geological Survey, and the resulting increase carried the output to the highest mark attained since the last week in January. The output is estimated at 8,506,000 net tons, an increase over the preceding week of 3.8 per cent and preliminary reports indicate that loadings on Monday and Tuesday of the following week will show a further increase of over 1500 cars a day.

### Panama Canal Tolls

The bill to provide free tolls for American coastwise vessels through the Panama Canal, S. 665, was briefly considered in the Senate on October 4. A unanimous consent agreement had previously been made for a vote on the bill not later than Monday, October 10. There has been very little discussion of the bill because the pending treaties and the revenue bill are absorbing the attention of the Senate and there is a report that President Harding is opposed to Congress acting at this time on the bill, for diplomatic reasons, although he has previously expressed his approval of the policy. Senator Fletcher of Florida made a long speech opposing the bill and estimated that to waive the tolls would mean a gratuity to the shipowners of at least \$1,500,000 a year, which would have to be made up by taxation.

### Preparation Urged for Heavy Refrigerator Car Traffic

Because of an expected big increase, estimated at nearly 40 percent over last year, in the amount of perishable freight to be moved during the next three months, the Car Service Division of the American Railway Association is calling for expedited movement. In a circular letter all carriers are urged to encourage the prompt loading and unloading of refrigerator cars, prompt handling in transit and preference in repairing. The circular says, in part:

"There must be very energetic action on the part of everyone. \* \* \*

"Do not load refrigerators with other than perishable traffic.

"Do not furnish refrigerators for potatoes while they can be safely transported in other cars.

"Do not hold refrigerators for other prospective loading which can be provided for without delay by refrigerators being made empty daily on your lines.

"Speed up unloading, do not use for storage purposes.

"Give the same prompt handling to the empty as the loaded cars. \* \* \*"

The situation is so serious and important that where it has not been done, it is suggested that "someone in your principal transportation office be assigned the special task of checking the refrigerator situation in detail day by day."

The task of moving this year's crop is a stupendous one, but, says the circular, "we believe it can be accomplished with reasonable success by the united support of the railroads, the shippers and their associations, with all others interested."

A check of 38 of the largest terminals last week showed 3851 refrigerator cars awaiting unloading of which 1203 had been delayed three days or more.

## Commission and Court News

### Interstate Commerce Commission

The conference relative to rates for the transportation of fish which was to be held in Washington on October 10, has been postponed to November 1.

The commission has announced that oral arguments will be heard at Washington on November 1, 2 and 3 in the valuation cases of the Los Angeles & Salt Lake and the Kansas City Southern.

The commission has suspended from November 15 until March 15, 1922, the operation of proposed increased rates on marble, jasper, onyx and slate, building and monumental, from eastern shipping points located in Groups D to J to California terminal and intermediate points.

The commission has suspended until January 31, the proposed cancellation of the existing through commodity rates on cast iron pipe from Attalla, Birmingham and other points in Alabama and Chattanooga, Tenn., to destinations in Montana, indicating the application of combination rates in lieu thereof.

The commission has suspended until January 31, the operation of an item of Trans-Continental West Bound Joint Tariff, which propose increased rates on marble, jasper, onyx and slate, building and monumental, from eastern shipping points located in Groups D to J to California terminal and intermediate points.

The commission has suspended until January 29, the operation of certain schedules published in a supplement to Agent E. B. Boyd's tariff proposing to eliminate from the list of articles taking corn rates, the commodities alfalfa feed, cane seed, cottonseed cake, cottonseed meal, copra cake, and other kindred articles, and place the same in the list of articles taking wheat rates.

The commission has suspended until January 28, the operation of certain schedules published in a Chicago, Rock Island & Pacific tariff which proposes to eliminate the existing provisions for the absorption of switching charges at St. Louis, Mo., and East St. Louis, Ill., on non-competitive traffic resulting in increases in charges to the extent of the existing switching charges on such traffic.

The commission has suspended until January 31, the operation of schedules which provide for the non-application of Group J rates from and to points on the Denver & Rio Grande Western east and south of Grand Junction, Colo., leaving applicable instead combination rates, which results in increases to the extent of the local rates to the boundary of the restricted territory.

### Hearings on Transcontinental Rates

The commission has announced a series of hearings before Attorney Examiner W. A. Disque in various western states on the application filed by R. H. Countiss, agent for the transcontinental roads, for authority to charge rates for the transportation of sugar, c. l. from Pacific Coast terminals and other western point to Chicago which are lower than the rates contemporaneously in effect to Omaha and other intermediate points.

Hearings will also be held on other similar applications filed by Agent Countiss, on ground coffee from New Orleans and Galveston to Pacific Coast terminals; on sisal and ixtle from New Orleans and Westwego, La., Galveston, Tex., and other Texas ports and Mexican gateways to Pacific Coast terminals; on asphalt, beans, canned goods, dried fruit, etc., from Pacific Coast terminals to New York via the Sunset Gulf route through Galveston; and on various commodities from eastern defined territories to Pacific Coast terminals which are lower than the rates contemporaneously maintained on like traffic to and from intermediate points.

## Foreign Railway News

### Siam Seeks American Bridge Materials

The commissioner general of the Siamese State Railways is advertising in this country for superstructures for steel railway bridges. Bids will be received up to December 31 at Bangkok, Siam. Specifications and drawings are obtainable from C. P. Sandberg, 143 Liberty street, New York.

### Thirty-Three Passengers Killed in Paris

In a rear collision of outgoing suburban passenger trains in a tunnel in Paris, France, on the evening of October 5, thirty-three passengers were killed and a large number injured, many being injured or killed by flames.

The trains had just left the St. Lazare station, about four minutes apart; and according to reports the leading train had been stopped by the rupture of an air brake pipe. Firemen could not get within 500 ft. of the burning cars; and at the time of going to press, complete reports had not been received.

A train for Marly-le-Roi ran into one destined for Versailles. The precise cause of the fire is not known, but the flames were intensified by the explosion of a gas tank.

### Motor Trucks More Careful of Shipments Than Railways, Says English Shipper

An English architect who handles large amounts of building materials and household furniture has written to the Times (London) praising the motor trucks for careful handling of shipments and decrying the carelessness of the railways of his country, in this respect, saying that since the war he has noticed a decided tendency on the part of contractors to ship by truck rather than by rail. It would seem from his statement that increasing carelessness on the part of railway employees is largely to blame for the damage which involves the railway companies in heavy claims and diverts the traffic to the highways.

"Quite lately," he continues, "I ordered 35 kitchen ranges from Falkirk, of which 11 arrived broken. The loss falls on the railway shareholders, the inconvenience on my contractor. I have seen a truck of large and expensive baths unloaded by tipping them over the edge of the truck on the platform; several were broken, amidst the laughter of the men. The loss to the companies by these methods must be very great. Surely some method of supervision of loading and unloading could be found that would prevent wilful damage, and even penalize carelessness. When I wish to make sure of a thing that I particularly want to arrive whole I do not send it by rail."

### The Railways of Spain

Commerce Reports presents the following statistics of the Spanish railways:

Four ft. 8½ in. (1.435 meter) gage railway:	
Single track .....	miles 6,773
Double track .....	miles 243
Locomotives .....	2,122
Passenger cars .....	4,803
Freight cars .....	40,304
Five ft. 6 in. (1.674 meter) gage railway:	
Single track .....	miles 2,119
Double track .....	miles 16
Locomotives .....	626
Passenger cars .....	1,250
Freight cars .....	10,230
Meter (39.37 inch) gage railway:	
Single track .....	miles 8,886
Double track .....	miles 260
Locomotives .....	2,748
Passenger cars .....	6,053
Freight cars .....	50,574

Spain is still dependent on foreign manufacture for its locomotives. When the Spanish government asked for bids on 300 locomotives and 10,000 cars in 1920, Germany offered to supply 150 of the locomotives and 5,000 of the cars within one year at prices which almost excluded competition. When the Spanish Government gave contracts early in 1921 for 119 locomotives Germany got them all.

At present nearly all the locomotives in Spain are of German, Belgian, French, Italian and English make. The American type of engine has not yet gained popularity in Spain, and American bids, being so far above those of European competitors, are not, as a rule, seriously considered. Of the Madrid, Caceres & Portugal Railway's 88 locomotives, 57 were built by the Chemnitz Works and 10 by the Cockerill. Of the Madrid, Zaragoza & Alicante Railway's 872 locomotives, 485 were built by five firms—Henschel, Maffie, Creusot, Chemnitz and Hannover.

The commonest type of locomotive in use in Spain is the English, equipped with English vacuum brakes. The dimensions and weight are governed by the gage and curve of track. The minimum curve radius for the broad gage is 250 to 300 meters (1 meter = 39.37 in.); for the narrow gage, 80 to 100 meters. Wide-gage rails are 30 to 35 kilos (1 kilo = 2.2 lb.) per meter on old roads and 40 to 45 kilos on modern lines; narrow-gage rails, 20 to 22 kilos per meter on the old roads and 30 kilos on the new. Each company adopts the locomotive which is judged to be best suited for its lines and work. In recent years several compound engines have been built, but they are not popular, and at present those fitted with steam superheaters predominate, mostly of the Schmit system.

### Private Operation Being Considered in Switzerland

After 25 years' experience with railway nationalization, the Swiss public is now debating a return to private operation, according to the Bureau of Railway Economics. Shortly after 1847, when the first Swiss railway was constructed and operated by private means, the feeling was so strong against nationalization that the Swiss Confederation voted that the railways should be built by private enterprise and vested sole authority in the cantons to grant concessions to the companies.

Some of the concessions expired between 1880 and 1890, but the government did not exercise its right to purchase of any of the lines until 1897. The general desire at the time was not so much to secure an increase in government revenue as to free the railways from the control of foreign interests, and to operate them on behalf of the public as a whole. The last large road (the St. Gothard) was purchased in 1909, and today the railway mileage owned and operated by the government amounts to 1,769 miles, representing 54 per cent of the total railway mileage of the country.

According to the Railway Gazette (London), the present movement for denationalization is not the work of any particular party or faction, but has adherents among persons of all shades of political opinion. Before the war the government lines were operated fairly well; during the war, however, the roads were militarized. Naturally military requirements came first and civilian needs second. Public annoyance over this fact led to inquiries into railway management generally, with the following results:

It was found that in 1913 the net operating revenue of the government lines provided a margin of profit (after deducting interest and amortization charges), of nearly \$4,500,000. Since 1914 the net revenue in no year has been sufficient to meet the fixed charges, and there was a steadily increasing deficit down to 1918, when it was nearly twice as large as the deficit for 1914. Some improvement was shown in 1919, although the deficit for that year was \$5,952,904. The total operating deficit on the government lines during the six years ending December 31, 1919, was \$66,604,583, equivalent to a deficit per mile of line of \$21,789.

The chief cause of these deficits is the great increase in wages and the cost of fuel. In 1919 nearly 71 per cent of the operating expenses was absorbed by compensation to employees, while the cost of coal and other materials made up an additional 24 per cent. The operating expenses in 1920 increased at a greater rate than the receipts, so that the operating ratio was even greater than that shown for 1919.

The Swiss public seem to have concluded that railway nationalization does not pay. A petition for denationalization of the railways is being circulated, and if it is signed by 50,000 duly qualified Swiss voters, the matter is to come before Parliament and be submitted to referendum. It is expected that this movement for denationalization will obtain the necessary 50,000 signatures, since the supporters of the movement include representative persons of all political parties.



## Equipment and Supplies

### Locomotives

THE BAHIA RAILWAYS of Brazil have ordered 17 locomotives from the Baldwin Locomotive Works.

### Freight Cars

THE MONONGAHELA CONNECTING is inquiring for 50 gondola cars, of 100-ton capacity.

THE CHICAGO, MILWAUKEE & ST. PAUL is inquiring for 2,500 composite gondola cars of 50-ton capacity.

THE ALABAMA, TENNESSEE & NORTHERN is inquiring for 140 flat cars and 75 composite gondola cars, all of 50-ton capacity.

THE KATANGA RAILWAY (Africa), is inquiring through the car builders for 25 general service cars, of 35 metric tons capacity.

THE LAKE CHAMPLAIN & MORIAH is inquiring for 12 ore car bodies, of 50-ton capacity and for 10 hopper ore cars, of 60-ton capacity.

THE ASSOCIATED OIL COMPANY, San Francisco, Cal., has ordered 8, three-compartment tank cars of 8,050 gallons capacity, from the Pennsylvania Tank Car Company.

THE MICHIGAN CENTRAL has awarded a contract for the repair of 500, 40-ton underframe box cars and 250, 50-ton steel twin hopper cars to the Illinois Car & Equipment Company, Hammond, Ind.

THE CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS has awarded a contract for the repair of 500, 50-ton all-steel box cars to the American Car & Foundry Company, the work to be done at the Madison, Ill., plant.

THE DELAWARE, LACKAWANNA & WESTERN reported in the *Railway Age* of September 10, as inquiring for 1,000 steel hopper cars of 50-ton capacity has ordered 500 from the Cambria Steel Company; 500 from the American Car & Foundry Company and 500 from the Standard Steel Car Company.

THE BALTIMORE & OHIO, reported in the *Railway Age* of September 10, as inquiring for 2,000 new car bodies, has ordered 500 steel hopper car bodies from the Cambria Steel Company, 500 box car bodies from the American Car & Foundry Company, 500 box and 500 steel hopper car bodies from the Standard Steel Car Company. The company is also asking for prices on 1,000 70-ton steel coke car bodies and 1,000 50-ton steel hopper car bodies.

THE NEW YORK CENTRAL has awarded contracts for the repair of 500, 40-ton steel underframe box cars to the Streeter Car Company, Kankakee, Ill., to the Standard Steel Car Company, Pittsburgh, Pa., and to the Ryan Car Company, Chicago. It has also awarded contracts for the repair of 500, 50-ton steel hopper cars to the Buffalo Steel Car Company, Buffalo, N. Y., to the Detroit, Mich., plant of the American Car & Foundry Company, and to the Ryan Car Company; and for 250 cars of this type to the Steel Car Company, Euclid, Ohio; also for 500 box cars to the Koppel Industrial Car & Equipment Company, Koppel, Pa.

### Passenger Cars

THE GREAT NORTHERN is inquiring for 30 complete steel underframes for first-class dining cars.

### Iron and Steel

THE COLORADO & SOUTHERN has ordered 312 tons of steel from the Chicago Bridge & Iron Company, for two oil storage tanks at Wichita Falls, Tex.

## Machinery and Tools

THE SEWELL VALLEY is in the market for shop machinery as follows: 1—1,200 lb. steam hammer; 1—36 in. by 36 in. by 10 ft. or 36 in. by 40 in. by 10 ft. planer, 3 heads, power feed, reversing motor drive; 1 No. 2 or No. 3 universal milling machine, belt drive, geared; 1—24 in. high speed, upright drilling machine, back geared belt drive with speed box; 1—58 in. or 68 in. 250-ton wheel press, inclined type, belt driven; 1—60 in. driving wheel lathe to turn straight connected and shay type drivers, variable speed motor driven. The company ordered recently 1 Greaves-Klusman 18 in. geared head engine lathe.

### Miscellaneous

THE PENNSYLVANIA ENGINEERING WORKS, Pittsburgh, Pa., are inquiring for 30, 4-wheel trucks.

THE LONG ISLAND will receive bids until 12 o'clock noon, October 10, for frogs, switches, guard rails, intermediate guard rail, and twin tie plates, track bolts and spikes.

THE NORFOLK & WESTERN will receive bids at Roanoke, Va., until 12 o'clock, noon, October 19, for 2,500 pr. angle bars; 400 steel spring plates; parts for electrical apparatus; approximately 100,000 lb. welding and threading steel; approximately 4,300 lb. spring steel; 5,000 copper signal rail bonds and 500 lb. flux rods.

### Signaling

THE GRAND TRUNK has ordered from the General Railway Signal Company 22 signals, and other apparatus, to be installed on its line between Oxford, Me., and Danville Junction.

THE WESTERN PACIFIC has ordered from the General Railway Signal Company a mechanical interlocking, to be installed by the signal company, at the crossing of the Southern Pacific at Fourth street, San Jose, Calif. The machine will have 17 working levers. The home signals on the Southern Pacific will be electric motor, Model 2A.

## Railway Construction

CHESAPEAKE & OHIO.—This company has under construction at Logan, W. Va., a new brick and concrete freight station 33-ft. by 200-ft. with an adjoining 220-ft. transfer platform upon which work has just been started. It is also planning a new station layout at the same place to include a 35-ft. by 100-ft. passenger station and a 35-ft. by 100-ft. baggage and express building, both of brick and concrete construction. These facilities will be served by an extensive system of covered concrete platforms. It is also contemplating the extension of the present engine house at Peach Creek, W. Va., to include five additional stalls, the installation of a new 100-ft. turntable and the revision of the supporting yard to include 10 additional tracks, five of which are now under construction, new machine, forge and pipe shops, a coaling station, inspection pits, cinder conveyors and other miscellaneous facilities.

CHICAGO, BURLINGTON & QUINCY.—This company contemplates the erection of a 9-stall roundhouse at Centralia, Ill.

CHICAGO & NORTHWESTERN.—This company has awarded a contract to John Marsch, Chicago, for the construction of a spur track 1½ miles in length at Consol, Iowa.

CHICAGO, ROCK ISLAND & PACIFIC.—This company contemplates the erection of a storehouse and oil house at Amarillo, Tex., to cost about \$10,000.

CHIPPewa IRON MINING COMPANY.—This company has awarded a contract to C. M. Magnuson for the grading of a 4½-mile spur track extending from the McComber mine, Vermillion Range, to the Armstrong Bay mine. The work is estimated to cost approximately \$40,000.

ILLINOIS CENTRAL.—This company has applied to the war department for permission to double-track its bridge across the Ohio river at Cairo, Ill. The cost of this work is estimated at \$8,500,000.

## Supply Trade News

The Canadian Austin Machinery, Ltd., Woodstock, Ont., has been incorporated to manufacture and distribute in Canada the equipment of the Austin Machinery Corporation.

E. E. Aldous has been appointed representative of the American Steel & Wire Company, in the St. Paul, Minneapolis and Duluth territory, with headquarters at St. Paul, Minn. Mr. Aldous has been connected with the company for 20 years.

The Central Steel Company, the National Pressed Steel Company and the Massillon Rolling Mill Company, all of Massillon, Ohio, have been brought together in a merger just completed. The new corporation takes the name of the Central Steel Company and the following officers have been elected: R. E. Bebb, chairman of the board of directors and president; F. J. Griffiths, first vice-president; C. C. Chase, second vice-president; H. M. Naugle, third vice-president; C. E. Stuart, secretary and treasurer. The reorganized company has complete modern equipment and facilities for producing all kinds of commercial alloy steels, hot and cold rolled sheets, hot rolled strip steel and light structural steel sections.

Sidney G. Down has been appointed to the newly created office of general sales manager of the Westinghouse Air Brake Company, with headquarters at Wilmerding, Pa. He was formerly Pacific District Manager of the Westinghouse Air Brake interests and president of the Westinghouse Pacific Coast Brake Company. Mr. Down served as general air brake inspector and instructor on the Michigan Central until 1901, and then joined the Westinghouse Air Brake organization. He was for several years instructor on the company's instruction car and later was appointed mechanical expert with headquarters in Chicago. In 1910 he was appointed district engineer and transferred to San Francisco and shortly afterward he was appointed Pacific district manager. He was largely responsible for the organization of the Westinghouse Pacific Coast Brake Company in California, and when it was formed, became vice-president and later president of that company. Two years ago he made an extensive tour of the Far East and established various commercial activities which have resulted in an increased business for the Air Brake Company from the Orient.

The firm of Stovel & Brinkerhoff, engineers and constructors, with offices at 136 Liberty street, New York City, was organized recently by R. W. Stovel and H. A. Brinkerhoff. Mr. Stovel was graduated as an electrical engineer from McGill University in 1897 and three years later was given the degree of master of science by the same university. From 1898 to 1903 he was with the Pittsburgh & Lake Erie, where he served on the design and construction of terminals and shops. He was then to 1914 with Westinghouse, Church, Kerr & Co., serving in various positions, including those of mechanical engineer and managing engineer, directing a large variety of work involving reports, designs and construction. From 1914 to 1917 he was with Gibbs & Hill in charge of

construction on the Pennsylvania electrification and also the Elkhorn grade of the Norfolk & Western. He was with the American Expeditionary Forces as lieutenant-colonel in charge of the mechanical and electrical equipment at ports used by the American army in France from 1917 to 1919, and in the latter year he re-entered the employ of Westinghouse, Church, Kerr & Co., as consulting engineer in mechanical and electrical work and since the merger of that firm with Dwight P. Robinson & Co., has been engaged on reports and power problems with the latter firm. Mr. Brinkerhoff served with the C. & C. Electrical Company as mechanical draftsman from 1893 to 1897, and then to 1920, was consecutively draftsman, chief draftsman, superintendent, general superintendent, engineer-in-charge and managing engineer, with Westinghouse, Church, Kerr & Co. He was general superintendent of construction in charge of the installation of all mechanical and electrical equipment in the Pennsylvania Station, New York, and also in charge of many other large engineering and construction projects including manufacturing plants and power plants for railroad and industrial use. Since 1920 he has served as industrial engineer in charge of the Industrial Engineering division with Dwight P. Robinson & Co., Inc.

### Pullman Company

The Pullman Company earned a net income of \$6,120,984 or 5.10 per cent on its capital stock in the fiscal year ending July 31, 1921, which compares with \$12,913,509 or 10.76 per cent in the previous 12 months. In order to maintain its dividend rate the company drew on surplus with the result there was a deficit in the fiscal year of \$3,478,836 as against a surplus of \$3,313,709 in the preceding year. The income account with comparison, follows:

	1921	1920
Federal Compensation.....	\$979,166	\$11,750,000
Earnings of cars.....	60,315,717	.....
Manufacturing profit, etc.....	5,947,181	2,769,777
Total income.....	67,242,066	14,519,777
Operating expenses, taxes, etc.....	54,853,523	1,606,268
Depreciation on cars in general.....	6,267,558	.....
Net income.....	6,120,984	12,913,509
Dividends.....	9,599,820	9,599,800
Deficit for year.....	3,478,836	*3,313,709

The balance sheet compares as follows:

ASSETS		July 31, 1921	July 31, 1920
Plants, etc.....		\$20,136,408	\$20,136,408
Cars and equipment.....		84,157,041	76,666,128
Repair shops.....		4,169,360	4,121,187
Pullman building, less depreciation.....		997,279	1,010,312
Other real estate.....		6,650	6,651
U. S. Government accounts.....		.....	35,519,098
Operation supplies, linens, etc.....		10,673,342	7,979,678
Securities.....		8,373,190	8,530,528
Cash.....		20,086,452	25,596,562
Car leases.....		4,700,218	5,606,566
Bills and accounts receivable.....		9,849,221	10,019,629
Unexpired insurance.....		99,825	123,220
Total current assets.....		\$53,782,250	\$57,856,183
Total assets.....		\$163,248,989	\$195,311,967
LIABILITIES		July 31, 1921	July 31, 1920
Capital stock.....		\$120,000,000	\$120,000,000
Inc. and other res.....		2,433,296	2,370,969
U. S. Government.....		.....	29,711,792
Profit and loss surplus.....		20,199,255	23,678,091
Accounts payable.....		18,216,477	17,151,165
Accrued dividends.....		2,399,960	2,399,950
Total current liabilities.....		\$20,616,437	\$19,551,115
Total liabilities.....		\$163,248,989	\$195,311,967

\*Surplus.

### Obituary

H. E. Billau, a field representative of the Sherwin-Williams Company for the past 35 years, died at Fremont, Ohio, on September 19, 1921.

Andrew G. Young, traffic manager of the American Sheet & Tin Plate Company, died at Cleveland, Ohio, on September 29. Prior to his appointment, 20 years ago, to the position which he held at the time of his death, Mr. Young was serving as general freight agent on the Lake Erie & Western.



S. G. Down



## Railway Financial News

**AHUKINI TERMINAL & RAILWAY.**—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue \$620,000 of capital stock, the proceeds to be used for the construction of a railway from Kapaa to Ahukini, Hawaiian Islands, 16 miles.

**CAMBRIA & INDIANA.**—*Asks Authority to Issue Stock.*—This company has applied to the Interstate Commerce Commission for authority to issue \$500,000 additional capital stock to represent an amount transferred from surplus to capital account, which it is proposed to distribute as a stock dividend.

**CENTRAL OF NEW JERSEY.**—*Sale of Stock of the Lehigh & Wilkes-Barre Coal Company.*—At a meeting of the board of directors on September 29, 1921, Robert W. de Forest, Daniel Willard and Edward T. Stotesbury were appointed a committee to receive and consider any proposals that may be presented to it by persons wishing to purchase 169,788 shares of the capital stock of the Lehigh & Wilkes-Barre Coal Company, which the railroad company is directed to sell under order of court in the so-called Reading trust suit, and to report to the board any such proposals previous to October 27, 1921.

The total issued capital stock of the Lehigh & Wilkes-Barre Coal Company is 184,200 shares.

*Annual Report.*—A review of this company's annual report for 1920 appears on another page of this issue.

**DELAWARE, LACKAWANNA & WESTERN.**—*Declares Quarterly Dividend of 3 Per Cent.*—The directors on September 29 declared a quarterly dividend of 3 per cent, payable October 20, to stockholders of record October 8. This is the first dividend action taken by the company since the 100 per cent stock dividend distribution made last July, increasing the total stock outstanding to \$97,277,000. The par value of the stock is \$50 a share, so that the road has now been placed on a 12 per cent annual dividend basis. Under the old capitalization this would amount to 24 per cent, as compared with the 20 per cent which the road paid from 1910 to 1920, including extra dividends of 10 per cent each year.

**ETTRICK & NORTHERN.**—*Claim for Guaranty Denied.*—The Interstate Commerce Commission has denied the claim of this company for \$15,816 on account of the guaranty for the six months period following March 1, 1920, on the ground that the carrier's property was not operated prior to January 20, 1919, and therefore had no contract for compensation from the government. Under these circumstances, the commission finds there is under the law no basis for any guaranty to the carrier.

**FRANKLIN & PITTSYLVANIA.**—*Asks Authority to Abandon Line.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its line from Rocky Mount to Pittsville, Va., 29.9 miles, which, the application states, cannot be operated except at a heavy loss.

**GREAT NORTHERN.**—*Asks Authority to Abandon Road.*—This company has applied to the Interstate Commerce Commission for a certificate authorizing the abandonment of its line from Portland to Portland Junction, N. Dak., 3½ miles.

**KNOXVILLE, SEVIERVILLE & EASTERN.**—*To Be Sold.*—This road will be sold at auction at Knoxville, Tenn., on November 10. Samuel E. Cleage was appointed receiver on January 27, 1921. The road operates between Knoxville and Sevierville, Tenn., 30 miles.

**NORFOLK & WESTERN.**—*New Director.*—F. S. Royster, of Norfolk, Va., has been elected a director to succeed Victor Morawetz, of New York, who has resigned.

**PHILADELPHIA & READING.**—*Annual Report.*—A review of this company's annual report for 1920 appears on another page of this issue.

**UNION PACIFIC.**—*Asks Permission to Be Director of Three Roads.*—W. Averell Harriman is the first railroad director to

apply to the Interstate Commerce Commission in accordance with paragraph 12, Section 20-a, of the interstate commerce act for authority to hold the position of director or officer of more than one railroad. The law provides that after December 31, 1921, it shall be unlawful for any person to hold the position of officer or director of more than one railroad unless such holding shall have been authorized by order of the commission upon due showing, in form and manner prescribed by the commission, that neither public nor private interests will be adversely affected thereby. Mr. Harriman asked authority to hold the position of director of the Baltimore & Ohio, the Illinois Central and their subsidiaries, while being at the same time a director or officer of companies of the Union Pacific System. An application dated August 10 for authority for directors and officers in common among all or any carriers comprising the Union Pacific System has been heretofore filed.

### Railroad Administration Settlements

Announcement was made at the White House on October 4, following a conference between the President and Director General Davis, that up to October 1, an aggregate of \$856,033,589 in claims had been filed by carriers on final settlement with the United States Railroad Administration. The total mileage recognized as under federal control was 241,000 miles. Claims filed represent a total mileage of 189,394 miles, or 78.705 per cent of the total mileage under federal control. If the remaining percentage of mileage files claims on the same basis as those already filed, the total claims that will be filed against the Railroad Administration will aggregate \$1,087,633,476.

The amount of claims on final settlement adjusted up to October 1, aggregates \$387,017,099. The mileage for which claims have been settled is 90,944 miles, or 47.907 per cent of the mileage of all roads that have filed claims, and 37.705 per cent of the total mileage of all roads under federal control. The amount paid in settlement of these claims is \$117,715,840, or 30.416 per cent of the amount claimed.

This indicates that the Railroad Administration has up to this time settled nearly 50 per cent of the claims which have been filed. Substantially all of these settlements have been made since the first of January.

### Treasury Payments to Railroads

The Treasury Department has announced the following payments on account of loans under Section 10 of the Transportation Act: Aransas Harbor Terminal, \$50,000; Boston & Maine, \$3,049,000; Erie, \$1,733,750; and also payment on account of the six months guaranty to the New York Dock Railway of \$64,000. The Treasury has now paid a total of \$430,000,000 on account of the guaranty for the six months' period following the termination of federal control, and \$251,000,000 on account of loans from the \$300,000,000 revolving fund.

### Dividends Declared

Delaware, Lackawanna & Western.—3 per cent, quarterly, payable October 20 to holders of record October 8.

Lackawanna Railroad of New Jersey.—1 per cent, quarterly, payable October 1 to holders of record September 8.

Northern Railroad (N. H.).—1½ per cent, quarterly, payable October 1 to holders of record September 12.

Pittsburgh & West Virginia.—Preferred, 1½ per cent, quarterly, payable November 30 to holders of record November 11.

THE PHILADELPHIA & READING announces that, beginning with November 1, passengers paying fare on trains, when they have had suitable opportunity to buy a ticket, will be charged five cents more than the regular fare. This action is similar to that taken about six months ago by the Pennsylvania. The Reading circular says: "Conductors and trainmen, by long practice, can lift, examine and cancel a ticket, all in one operation, and a trainload of ticket passengers can be quickly covered. But when (particularly in the suburban district, where the train speed averages about three minutes between stations) the conductor is confronted with a cash paying passenger he must stop, ask destination, ascertain fare and war tax, punch cash fare receipt, collect fare, and usually make change (frequently from large bills) and finally tear off and hand receipt to passenger before proceeding, all of which represents an unwarranted consumption of time.

## Railway Officers

### Financial, Legal and Accounting

**G. H. Parker**, formerly controller of the Railroad Administration, has been appointed commerce counsel for the American Short Line Association.

**C. M. Sheafe, Jr.** has been appointed general solicitor of the New York, New Haven & Hartford with headquarters at New Haven, Conn., succeeding **J. C. Sweeney**, resigned to enter private practice, effective October 1.

### Operating

**M. H. Gold** has been appointed trainmaster of the Florida division of the Seaboard Air Line with headquarters at Tampa, Fla., effective October 1.

**Walter Dennis**, whose appointment as superintendent of the New Jersey, Indiana & Illinois, with headquarters at South Bend, Ind., was announced in the *Railway Age* of October 1 (page 650), was born at Alliance, Ohio, in 1879. He graduated from the State University of Kansas in 1900, and entered railroad service in the same year as an axeman in the maintenance of way department of the Kansas City Southern. During 1902 he was in the employ of Waddell & Hedrick, Kansas City, Mo., as a bridge draftsman, and in 1903 he was employed by the Kansas City, Mexico & Orient on location and construction work. In 1904 he was appointed chief delineator on double track and new construction work of the Union Pacific, which position he held until 1906, when he became associated with Horace G. Burt, consulting engineer on special reports in connection with grade reduction and economics. In 1907 he returned to the Kansas City Southern as office engineer. He left this road in 1912 to enter the engineering department of the Chicago, Rock Island & Pacific, where he served successively as construction engineer, special engineer and assistant engineer on special investigations. In 1917 he left the Rock Island to become principal assistant engineer of the Wabash, with headquarters at St. Louis. During the war he served as major in the construction division of the American army. He returned to the service of the Wabash in November, 1918, and was appointed division engineer of that road with headquarters at Moberly, Mo., which position he was holding at the time of his recent appointment.



W. Dennis

**B. W. Wilson** has been appointed general agent in the passenger department of the Chicago, Burlington & Quincy, with headquarters at St. Paul, Minn., succeeding **C. I. Twyman**, who has been transferred, effective October 1.

**A. B. Raine**, assistant general manager of the Tennessee, Alabama & Georgia, has been granted leave of absence on account of illness, and **H. F. Bohr**, traffic manager, has been appointed assistant general manager in the interim, effective September 1.

### Traffic

**W. T. Lyman** has been appointed general agent of the Wabash with headquarters at Boston, Mass.

**P. M. Browning** has been appointed commercial agent of the Seaboard Air Line with headquarters at Cordele, Ga.

**E. F. Austin**, formerly division freight agent of the Pennsylvania, has been appointed a member of the auxiliary committee of the Central Freight Association, succeeding **W. C. Laughlin**, deceased.

**J. F. Dyas**, traveling passenger agent of the New York Central, with headquarters at Memphis, Tenn., has been promoted to general agent in the passenger traffic department with headquarters at Omaha, Neb. **C. A. Brawner**, traveling passenger agent with headquarters at St. Louis, Mo., has been promoted to general agent in the passenger traffic department, with headquarters at Dallas, Tex. **R. J. Ross**, traveling freight agent, with headquarters at Niagara Falls, New York, has been promoted to general agent in the freight traffic department, with headquarters at Omaha, Neb. **A. C. Huggins** has been appointed general agent in the freight traffic department with headquarters at New Orleans, La., and **M. A. Greeding** has been appointed general agent in the freight traffic department with headquarters at Dallas, Tex. These changes are effective October 1.

### Purchasing and Stores

**A. Singleton** has been appointed purchasing agent and general storekeeper of the Hocking Valley with headquarters at Columbus, Ohio, succeeding **J. R. Mueller**, purchasing agent, and **Leon Stiers**, general storekeeper, assigned to other duties.

### Obituary

**Lewis E. Foster**, claim accountant of the American Railway Express, with headquarters at Chicago, died in Chicago on September 16.

**J. D. Hawks**, formerly president and general manager of the Detroit & Mackinac, died on September 20 at Gloucester, Mass. Mr. Hawks was born at Buffalo, N. Y., on October 13, 1847. He was graduated from Buffalo High School and the University of Michigan and entered railway service in 1870 as an assistant engineer on the Lake Shore & Michigan Southern. In 1875 he went to the Erie division of the same road as assistant engineer and in 1878 to the Lake Shore division. In 1881 he became superintendent of construction of the New York, West Shore & Buffalo (now a part of the New York Central) and, in 1883, engineer of maintenance of way. In 1884 he was appointed chief engineer of the Michigan Central and left that position in 1892 to become general manager of the Detroit Citizens' Street Railway. The following year he was appointed manager of the Detroit Bay City & Alpena (now the Detroit & Mackinac). In 1895 he was elected vice-president and general manager of the Detroit & Mackinac and assumed the presidency of the same road in 1896. He served continuously in that position until his retirement in May, 1920.



J. D. Hawks

**J. D. Brennan**, superintendent of the Sacramento division of the Southern Pacific, died at his home in Sacramento, Cal., on September 20, after a long illness. Mr. Brennan was born in 1864 and entered railroad service in 1881. He served in various positions on different roads until 1909 when he entered the employ of the Southern Pacific, where he was successively superintendent of the Stockton, Western and Sacramento divisions of that road.